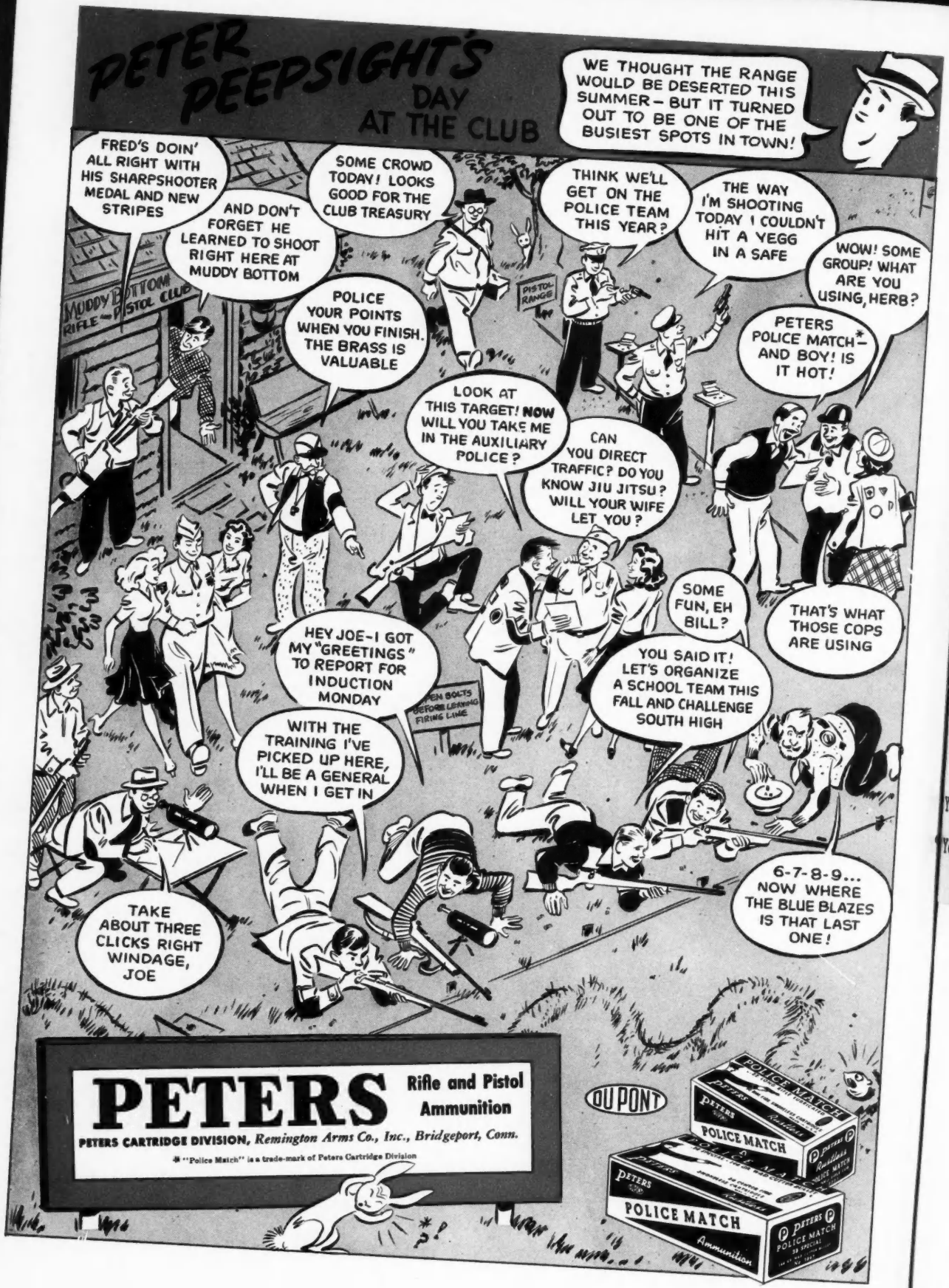
AUGUST
1943

AMERICAN RIFLEMAN


PETER PEEPSIGHT'S DAY AT THE CLUB
WE THOUGHT THE RANGE WOULD BE DESERTED THIS SUMMER – BUT IT TURNED OUT TO BE ONE OF THE BUSIEST SPOTS IN TOWN!
FRED'S DOIN' ALL RIGHT WITH HIS SHARPSHOOTER MEDAL AND NEW STRIPES
AND DON'T FORGET HE LEARNED TO SHOOT RIGHT HERE AT MUDDY BOTTOM
SOME CROWD TODAY! LOOKS GOOD FOR THE CLUB TREASURY
THINK WE'LL GET ON THE POLICE TEAM THIS YEAR?
THE WAY I'M SHOOTING TODAY I COULDN'T HIT A YEGG IN A SAFE
WOW! SOME GROUP! WHAT ARE YOU USING, HERB?
MUDDY BOTTOM RIFLE AND PISTOL CLUB
PISTOL RANGE
POLICE YOUR POINTS WHEN YOU FINISH. THE BRASS IS VALUABLE
PETERS POLICE MATCH* – AND BOY! IS IT HOT!
LOOK AT THIS TARGET! NOW WILL YOU TAKE ME IN THE AUXILIARY POLICE?
CAN YOU DIRECT TRAFFIC? DO YOU KNOW JIU JITSU? WILL YOUR WIFE LET YOU?
SOME FUN, EH BILL?
THAT'S WHAT THOSE COPS ARE USING
HEY JOE – I GOT MY "GREETINGS" TO REPORT FOR INDUCTION MONDAY
YOU SAID IT! LET'S ORGANIZE A SCHOOL TEAM THIS FALL AND CHALLENGE SOUTH HIGH
WITH THE TRAINING I'VE PICKED UP HERE, I'LL BE A GENERAL WHEN I GET IN
6-7-8-9... NOW WHERE THE BLUE BLAZES IS THAT LAST ONE!
TAKE ABOUT THREE CLICKS RIGHT WINDAGE, JOE
PETERS
Rifle and Pistol Ammunition
PETERS CARTRIDGE DIVISION, Remington Arms Co., Inc., Bridgeport, Conn.
* "Police Match" is a trade-mark of Peters Cartridge Division
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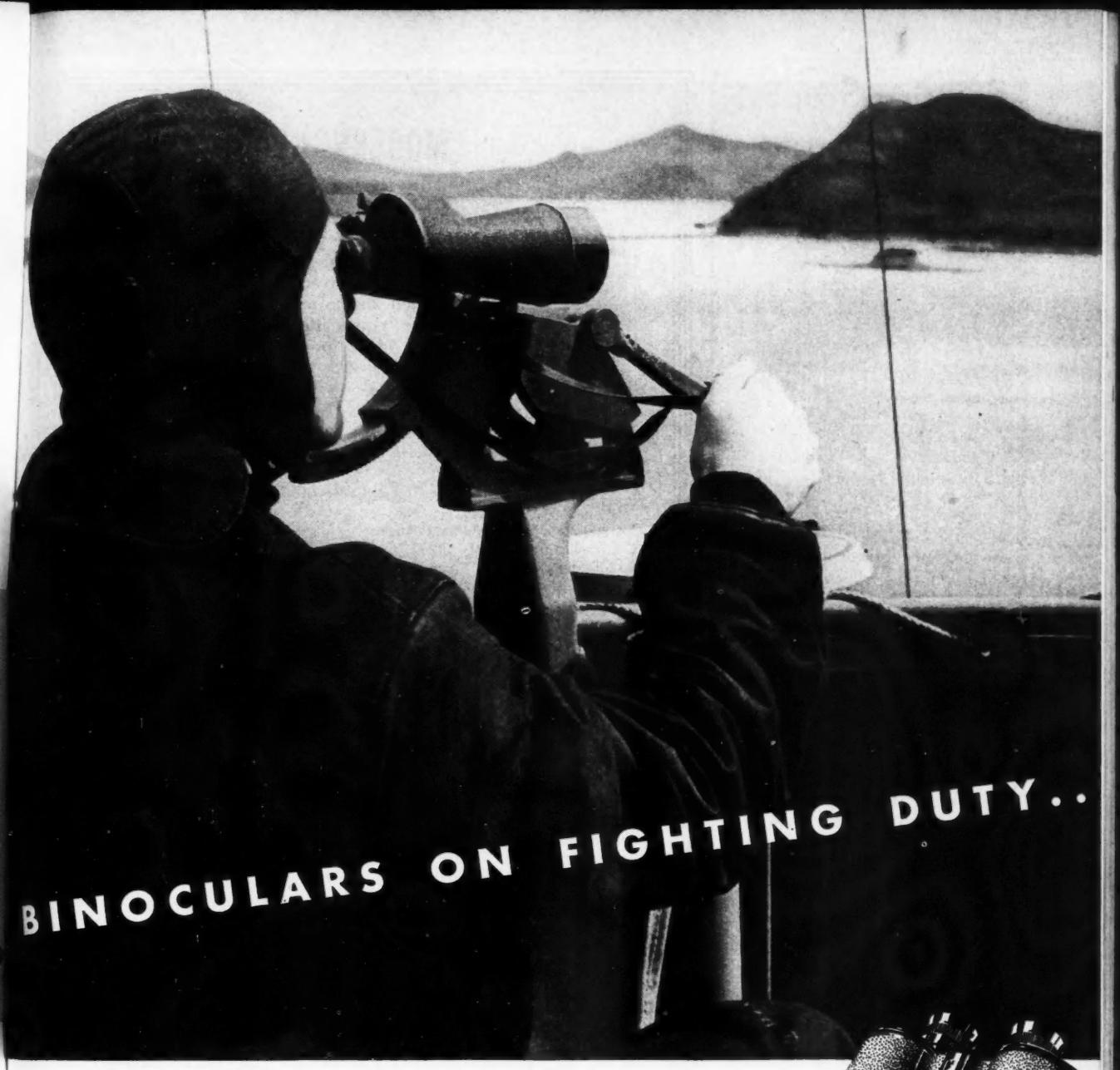

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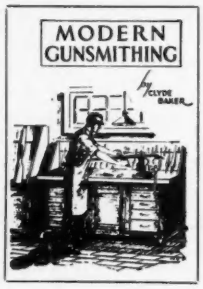

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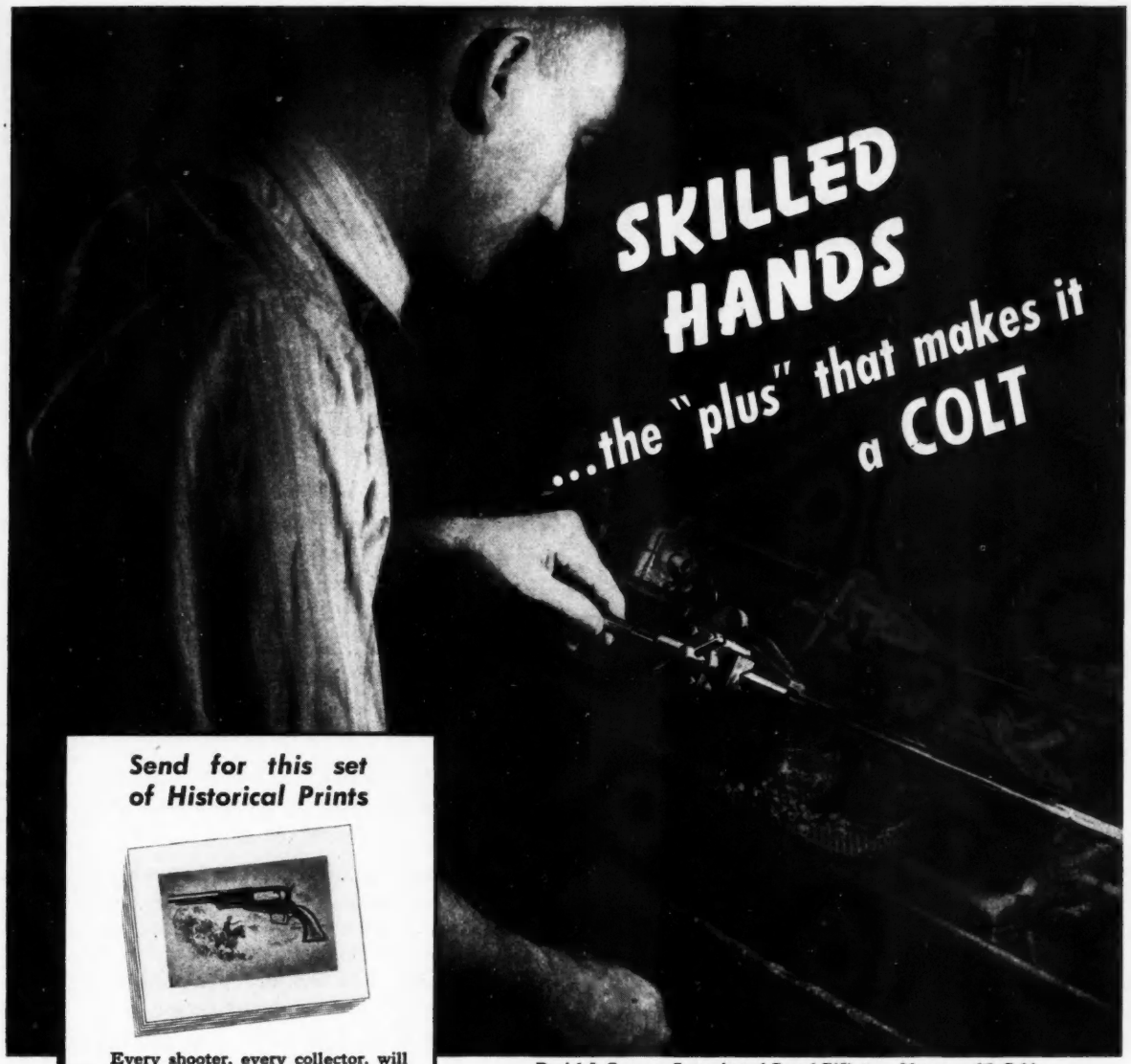

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One Shot

IN GREECE, a weary British rearguard slogs over a bridge of the Corinth Canal. Engineers remain to lay demolition charges. Before they can be fired, German parachutists shower down, seize the bridge. Engineer Lt. Rawlingson escapes, hides in a hole. The Germans search frantically for the hidden TNT. Suddenly, Rawlingson spies one of the distant detonators—no larger than a cigarette, hanging by the connecting wire against the gray stone of the bridge. Raising his rifle, he sights carefully—fires! A deafening roar. Bridge and Germans fall, a tangled mass, into the Canal. The British trudge on toward their ships—*saved by a rifleman.* (This is a true story, except for the rifleman's name, from the September 1942 issue of The American Rifleman.)

EVER SINCE rifling turned guns into deadly precision instruments, the trained rifleman has been the backbone of the army.

Our own history, especially, has been the history of men who shot faster and straighter than their foes. But America is no longer "a nation of marksmen"—*less than 2% of inductees know anything about rifle arms.* That is why fire-arms manufacturer O. F. Mossberg & Sons, Inc. urges *all* owners of .22 calibre rifles to . . .

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So . . . share your rifle with your neighbor, under the NRA training program. Help teach patriotic boys—and men—how to use a gun. Ammunition is made available through the National Rifle Ass'n. *Join, or start,* a local rifle club—*now!*

Take a *real step* toward making America, once more, a nation of marksmen—*unconquerable!* Mail the coupon for helpful, free booklets—today.

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Our Hearts are Mighty Close to these Boys

War-mothers, and others, will understand our feeling for these particular boys. For scattered through Uncle Sam's Armed Forces are more than 2600 of our own sons.

Like you, we've shaken hands with them as they've gone off to the front. Like you, we know in our hearts that their deeds will bring new luster to America—new meaning to Freedom . . . left behind, we work at our machines to make the weapons they fight with.

On guard for America since 1866, this is the third time we have laid aside our peace-time tasks to help the fight for freedom. Now, night and day, vast quantities of fighting tools* roll off our production lines. Headed for the fighting fronts, our hearts go with them!

WINCHESTER REPEATING ARMS COMPANY
New Haven, Conn.
Division of WESTERN CARTRIDGE COMPANY

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PARATROOPER

A new American fighting man in this war, he naturally needed a new firearm. Winchester *originated, engineered and developed it* for him—the Winchester Carbine. It's officially known as the U. S. Carbine, cal .30 M1. We make ammunition for it also.

SIGNAL CORPSMAN

The Winchester Carbine brings real defense power to the Signal Corpsman. Now stringing wire for messages that *must* get through, he has the protection of a weapon that weighs little more than one-half as much as the standard rifle yet carries 15 rounds in its magazine.

ENGINEER

Out of the way, slung over the shoulder, the Winchester Carbine adds safety—boosts morale of the traditionally overloaded engineer. Now building bridges, clearing mine fields, etc. he has this semi-automatic weapon that is faster in action, greater in fire power, more accurate and far longer in range than the service pistol.

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Armed with hand and rifle grenades that, thanks to Winchester primers, are always *sure-fire*, and equipped with a Garand Rifle that fires 2¼ times faster than the enemy . . . Uncle Sam's doughboys are the best equipped soldiers of the world. Winchester, long in quantity production of Garands, was able to cut their unit cost to less than ⅓ their original contract price.

MARINE

When the Marines land to bring "the situation in hand" there go Winchester Carbines, Winchester-produced Garands and Winchester military ammunition . . . cal .30 Garand Cartridges, cal .30 Winchester Carbine Cartridges and cal .50 Machine Gun Cartridges and Tracers.

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NAVY MAN

On the seven seas many of Uncle Sam's sailors are equipped with Winchester-made Garands. Their anti-aircraft machine guns fire cal .50 Winchester Cartridges. Have you wondered about the power plants that drive invasion landing-barges? Winchester also has a part in *their* efficiency. Winchester Cartridge Core Tubes in the lubricating oil coolers, help keep their engines cool.

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Enemy planes strafing Uncle Sam's anti-aircraft gun emplacements are met by a stream of a .50 Winchester Armor piercing machine gun bullets. They have the power to knock *any* enemy plane out of the skies.

COAST GUARDSMAN, SEMPER PARATUS—*always ready*—is the proud boast of U. S. Coast Guardsmen. Helping them are Winchester cal .50 and cal .30 Machine Gun Cartridges and Tracers. On land, at sea, or in the air, they can be depended upon. Extremes of heat, cold or humidity meet their master in Winchester stabilized priming mixture.

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The Official Journal of The National Rifle Association of America

AMERICAN RIFLEMAN

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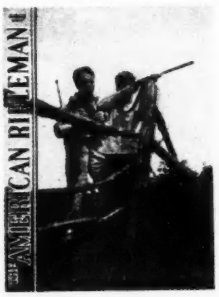

THE COVER: The father-son team is the finest tradition of shooting. With many teams broken up for the duration, memories of the associations, the instructions in sportsmanship, in shooting will be enhanced by our cover for this month. It is a reminder of pleasant days afield, of peace-time shooting at its best. It takes us away for the moment from the many military themes of cover illustrations. Lt. John Scofield had a few days' leave so we used his talent by supplying Kodachrome and rifle-minded cast.

THIS MONTH:

When our troops moved into Sicily in a big way, just a few days after the appearance of the July issue with its lead story, *"Armed for Surrender?"* we justly claimed another piece of editorial luck in selecting (four weeks before the invasion) so timely an article. Much of the credit for this editorial timing is due former Associate Editor, **Lt. John Scofield,** who responded to our hurry-up order with a comprehensive survey of the Italian weapons our boys were soon to face. His second and concluding instalment follows in this issue.

For the story on our present-day militia—the men who are giving up their time to insure preparedness on the home front—we sent our able news editor, **Raymond J. Stan,** to Ft. Meade, Md., for a last assignment before taking on Uncle Sam's khaki. The story, *"Part Time Soldier"*, is a recognition of the potential strength of civilians, trained in the use of small arms and in basic military science, for home-front emergencies or invasion threats. It should complement the article "Target for Today", as an incentive for every civilian rifle club member to get behind the training program so widely acclaimed by our military leaders.

When **Dick Calkins** sent us the page of sketches appearing on p. 20 of this issue, we spotted the "Buck Rogers" signature and asked: "Is it possible that the death rays, rockets and futuristic devices of the well-known 'Buck' is the result of a rifleman's imagination?" Interestingly enough, yes, for Calkins is a member of the Wheaton (Ill.) Rifle Club and has a 10-X possible to his credit. His reply to our query is carried in "Powder Smoke," p. 40.

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TARGET FOR TODAY

By C. M. PALMER, JR.

"THERE IS STILL NO SUBSTITUTE for hits in battle," says Lt. Gen. Lesley J. McNair, Chief of the Army's Ground Forces. He bases that statement on "experience in all theaters in which we are engaged today." Continues General McNair, "Straight shooting riflemen are as important today as ever. The nearer a rifleman approaches perfection the more confident and self-reliant he becomes and the greater will be his effectiveness as a fighter." This is the reason for the Pre-Induction Training Program of the NRA.

In spite of all the "modernizing" and "mechanizing" of warfare, the man with the rifle, on his own two feet, is still the man who takes and holds territory. Warplanes, tanks, and artillery and all the "modern conveniences" of conflict are but accessories to the guy, who with his rifle, carbine, or Tommy-gun, goes into the lines of the enemy and kicks him out.

The present conflict is not the static, trench warfare of 1918. It is fluid and fast. Anyone, anywhere, civilian or soldier, is apt to find himself at any moment tangling with Japs or Nazis springing from the ground or dropping from the skies. *The Cavalry Journal* recently pointed out, "Now we are back again to an age of the rattlesnake, bad man, and savage, and we must revert to the tactics and technique of our forefathers who wiped them out in their day."

The National Rifle Association is and has been doing everything possible to develop rifle consciousness in our people. It has urged all its 4,000 affiliated clubs to undertake the training of civilian populations in at least the basic principles of rifle marksmanship.

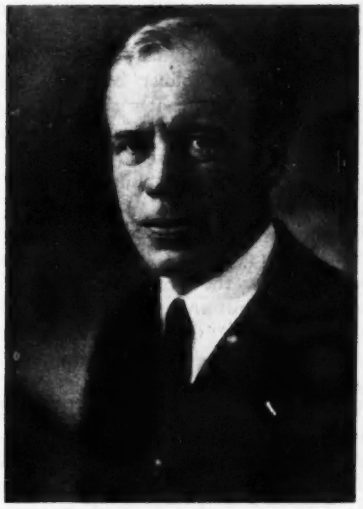
This is not a new program. It started way back when the NRA was organized in 1871. The current concept of the job started when the Germans invaded Czechoslovakia. The clubs needed little encouragement. They took hold of the idea and started. They worked on it independently, on their own, for over a year before a specific, official program was developed with *certified* Small Arms Firing Schools and *officially* qualified instructors.

When, after Pearl Harbor, the nation began building its armed forces, it was found that not more than two per cent of the men entering these forces had any knowledge of firearms. From then on, the program was aimed directly at the young men of draft age who would undoubtedly be called into service. With the blessing of

"As President of the National Board for the Promotion of Rifle Practice, I have a high appreciation of the value of civilian marksmanship training and a friendly interest in the program of the Board, and of the National Rifle Association as well.

"To a soldier, his rifle is his pride. Our national tradition of minutemen and pioneers who won a country by their marksmanship is held high by Army men now fighting to preserve the freedom won with powder and ball.

"That is why I endorse the National Rifle Association's nationwide Pre-Induction Training Program most heartily and urge prospective selectees to take advantage of it. Such a program will give to tens of thousands of American men and boys the opportunity to learn basic principles before they enter the Services."



Robert Porter Patterson, Under-Secretary of War

the War Department and with rifles and ammunition allocated by the War Production Board, the Pre-Induction Program of the National Rifle Association went into high gear.

Much has been accomplished. Just how much, is hard to say. Records of the work prior to October, 1942, are difficult to ascertain as the program did not assume official status until that time. However, from available reports and with a "leaning backwards" toward conservatism, it is possible to gain at least some idea of what was done. It is safe to say that up until the time the program assumed official status there were not less than 200,000 people taught the fundamentals of handling the rifle, the handgun and/or the riot or shotgun, under the able tutelage of NRA members in nearly 1,000 clubs.

Currently there are about 1,400 clubs operating such schools of which about 650 are officially certified with qualified instructors. Definite records have been kept by these clubs and we know positively that since October, 1942, they have graduated over 10,000 persons trained in the basic principles of marksmanship.

The work of the 750 clubs which have not as yet been officially qualified is not so surely known. That they are working steadily along these lines is known, however. A moderate estimate of the number of riflemen turned out by these groups is 15,000. Add to this the output of 125 NRA chartered, college clubs and 200 high school clubs at 6,250 and 10,000 respectively and we begin to get an idea of the importance of these clubs' activities. The grand total will run not less than 250,000 citizens of all classes who have received this basic training in the use and handling of small arms.

Shortly after the original program got under way and before Pearl Harbor, it became apparent that there was need for a tighter organization and more standardized instruction. Many well-meaning, but actually unqualified persons undertook to impart knowledge of small arms that they themselves did not possess. Others were in the game as a racket. They did more harm than good. An antidote for these activities to insure proper teaching by capable instructors was needed.

Such a program was duly brought into being by NRA Headquarters, covered by proper literature explaining the whys and wherefores. This material is available for the asking.

While this was going on, instruction methods were also being improved. It was apparent at the outset that if this job was to be really effective and made to fit the prospective draftees for service, it should follow closely the courses propounded in the service. For the Association, always in close contact with the Army, Navy, and Marine Corps, this was a simple matter.

As a result, any man who now completes this *official* Pre-Induction Training Course and enters the service is equipped to follow right through on his original schedule. He simply steps into an advanced training program in the service and is one jump ahead of his fellows who have not had the advantage of the preliminary basic training which he has enjoyed.

As General McNair stated in a recent letter, "The man who comes into the Army with previous marksman-

ship training is a man more valuable to his country, not only because of his ability to shoot but because of his ability in teaching others to shoot."

Col. F. C. Endicott, Director of Civilian Marksmanship, too, has written that, "All men anticipating military service should regard it as an *obligation* to take advantage of this school." That makes plenty of sense. Not only is the prospective soldier better qualified for the job ahead, but quite frequently the man with previous small arms experience is given special rating and in many instances the chevrons of a non-com. His value as a rifleman-soldier is enhanced, but his value as an instructor is even greater.

Candidates for the armed forces are not the only ones qualified to take this training. Anyone is eligible, but priority goes to the men who are likely to be called into service. Civilians are encouraged to undertake the work and are doing so. Guards, auxiliary military police, and civilian defense workers are all training along with those eligible to the draft.

In Washington, D. C., recently there were forty-one officers of the Quartermaster General's Office graduated with the 400 others who took this training.

Out in Trona, California, not long ago the Searles Lake Rifle Club had an unusual opportunity for war-time service thrust upon it. This was reported in a recent issue of THE RIFLEMAN. An Engineer Battalion came into the neighborhood. They were looking for a place to shoot. They found it. The Searles Lake Rifle Club turned over to them its .30 caliber range. The "running deer" was turned into a tank range and the firing point moved back to 500 yards. But more than this, the club organized itself for concentrated instruction and in five weeks time, four hours every evening, the members gave basic rifle instruction to 121 of the Engineers who had never before had any such training. More than eighty qualified on the small bore range and everyone of them did so later on the .30 caliber range when they went outdoors to fire the Service rifle.

With General McNair and Colonel Endicott, the leaders of war man-power, including General Holcomb of the Marines, General Lewis B. Hershey, Director of the National Selective Service System, Paul V. McNutt and others, have all endorsed and commended this program.

What do the men who have had the advantage of this training say about it?

Paul S. McNeill, writing to his former instructor, R. C. Wilson of St. Louis, said in part, "I joined the Navy and have been here at Camp Allen for about two weeks. . . . When they learned that I had had experience as a rifleman and a coach, they sent me to Small Arms School. After I finish the course, I understand that I will be a Gunner's Mate and an instructor in the use of different arms. So, thanks to the start you and the Cleveland High School Rifle Club gave me. . . ."

"I am now instructor of our company," wrote Sgt. John R. Sadler from Camp Crowder, Missouri. "Approximately half of our company have now qualified for Marksman . . . several, including myself, have made Sharpshooter."

Lt. Albert Blasco, U. S. Signal Corps, writes, "I am glad that I have had rifle training at home because it gives me more confidence in my ability to hold my own on the battlefield."

John Cunningham, writing from the U. S. Naval Training Station at Newport, Rhode Island, to the Secretary of the Boston Rifle and Revolver Club, said in part, "First day we shot the .22. . . . I did pretty well; in fact, it was the best of the whole company. The next day we shot the .30-'06. My score was not as good as the day before but I was still top man . . . in all three ways of shooting. . . . It was tops for the whole range and the officer told me I had a very good chance to go to Gunner's School." Secretary Bamford stated that this young sailor received his basic training in January (1942) and "had never before that time shot any gun."

T. R. Barnes of the Bakersfield, California, Rifle Club writes about a group of boys who took their basic rifle training at that school. They are now in the service and one of them wrote Mr. Barnes as follows, "This is the day I've been waiting for ever since I entered the Army. The official bulletin came out about an hour ago with the official qualifications and scores. I made Expert with the Garand and was fourth on the list, only two points behind the leader. . . . I guess all that practice in our living room at home helped my offhand. I remembered what you told me about squeezing them off and I made eight straight bulls, getting fifty-six out of sixty. So you can tuck a feather in your cap and take credit for making an Expert, because without your help and guidance I wouldn't have been able to make any kind of a showing."

George Beilman, writing to his former instructor in the Wilkes-Barre, Pennsylvania, High School Junior Rifle Club, says in part, "I'm going through Aerial Gunnery School here in Panama City, Florida. It's a pretty tough course but I'm not having any trouble with shooting, thanks to your swell effort and time. . . . All I ever learned about shooting was taught to me in high school. . . . I had a letter from my brother and was glad when he told me he was in the rifle club. . . . Stress the importance of the rifle club to your students and *keep my kid brother 'on the ball'*."

Two things are needed to put this job "over the top."

First, of nearly 4,000 clubs affiliated with the NRA there are but 1,400 operating Small Arms Firing Schools. A greater percentage of the clubs should be on this job.

Second, less than half of the clubs co-operating on this program have certified their schools and had their instructors qualified. This is important. It places the whole program on a much superior basis. It adds prestige. It means that when General McNair and others recommend this necessary training to the youth of the country they know they are getting recognized quality.

"It is unfortunately true that the great body of our citizens shoot less and less as time goes on. To meet this we should encourage rifle practice among schoolboys, and indeed among all classes, as well as in the military services, by every means in our power. Thus, and not otherwise, may we be able to assist in preserving the peace of the world. . . . The first step—in the direction of preparation to avert war if possible, and to be fit for war if it should come—is to teach men to shoot."—*President Theodore Roosevelt in His Last Message to Congress.*

Home for Orders

DESCRIBING the adjournment of Congress on July eighth, one newspaper reporter mentioned the speed with which Senators and Representatives made train and plane reservations to get back home. He added: "One *wag* remarked that Congress was going home for instructions." The italics are ours.

This is the Capital of a nation which during two centuries has poured out the blood of its sons in the continuing fight for representative government. *Here,*—not in Berlin, Rome or Tokio,—a trained observer of the government scene is amused at the "waggish" remark that the Congress is "going home for instructions!"

This did not come from the pen of some columnist with an idea to put across. It was written by an ordinary newsman who reports without bias what he sees and hears. Why should such a man be just a little amused at the "wag" who suggested that the elected representatives of the American people were going home for instructions from the people they are supposed to represent?

The answer is known to every newsman in Washington. For a decade or longer Congress has dodged its responsibility to sustain and maintain representative government in America. It has steadily delegated powers to the Executive Branch which the Constitution intended to be exercised by the Legislative Branch of our Government. Congress has looked less and less to the people and more and more to the steadily expanding bureaucracy of the Executive Branch for its instructions and advice.

Now Americans are dying, again, that representative government may live. The easy-going American is becoming lean and tough. He is thinking about things that haven't bothered his head for years. Things like giving up something he wants so that someone else can have a little too. Things like having America's "limitless" oil reserves run out just when most everybody could afford a vacation trip in an automobile. Things like having forthrightly to pay his share of taxes instead of kidding himself that just the rich guys pay for subsidies to voters. Things like having his boy leave home—and maybe never come back—or maybe come back in such shape you almost wish they had finished the job they started on him—those dirty rats who tried to strike down Freedom.

That's it—Freedom! The good old American independence! If we can preserve that for future generations it will be worth the cost.

Yes, the American *is* thinking about things that haven't bothered his head for years. And the average Senator and Representative, being a good American, has been thinking too. Maybe *he* has one or two sons and daughters who are away and may not come back. He knows as well as any Washington newsman how far down the primrose trail of Bureaucracy we have driven, though the bandwagon still waves banners labeled "Democracy" and "Freedom" from this and that. The average Congressman is beginning to wonder if the American ideal of freedom is the kind that is specified as freedom *from* something. Instead, isn't it freedom *for* something? Do Americans want freedom to avoid starving or freedom to eat as much as their initiative and courage will get for them? Freedom from the appointment of crooked or incompetent bureaucrats or freedom to *elect* their own officials and to kick out the crooks and incompetents? Freedom from labor on Saturday or freedom to work when it pleases them to do so?

Yes, thank the God of our Founding Fathers, this Congress *has* gone home for instructions! That it has done so isn't funny. It isn't ludicrous. It isn't "reactionary." It is something to bring equal joy and hope to Democrats and Republicans. It is a sign that the American Congress has decided to return to its proper Constitutional role as the representatives of the people.

For too long the great body of honest, hard-working, thrifty Americans have said nothing. They have allowed professional pleaders to do most of the talking to Congress. Not all farmers think alike, nor all labor union members. Not all "white collar" workers think alike, nor all managers, bankers and merchants. *Your* Congressman wants to know what *you* think about the problems we *all* face.

You tell him!

Your fathers and your sons, from Bunker Hill to Bataan, have died to insure your right to speak your *own* thoughts to your representatives in the Government. Keep the faith!—C. B. L.

PART-TIME SOLDIER

By RAYMOND J. STAN

JOE AMERICA, part-time soldier, is getting on with the war very well now, thank you.

You know Joe—remember—the guy who peddled smokes at the corner drug store, the friendly chap down at the bank, the fellow who sold you your last new car—way back "when". He's a Minute Man now, or a State Guardsman, or perhaps he nudges a crate along the Delaware coast for the Civil Air Patrol. Let's just say that Joe represents a lot of folks in this country who are volunteering their time and efforts to help win this war, and keep it well away from our shores.

It's certainly not like it used to be with Joe. The pressure's on and Joe's in the show now. Sure, he's in the militia. Yeah, the National Guard's all gone into Federal service but this is the new State Guard taking the place of the Guard boys who are off in Africa, or the Solomons or Australia or wherever they are. Veterans, now, all of them and some of Uncle Sam's finest soldiers. They are making an invaluable payment on an investment of peace times. The Army is thankful now for the sometimes disdained National Guardsmen. So are the home town folks who oftentimes smiled at these civilians playing soldier. But the old Armory isn't deserted and empty for Joe and his gang are keeping things going until the old crew comes home.

Picked demonstration troops with army equipment show Joe the correct way

And now the Army's taken Joe under its wing and teaching him what the war's all about. Joe's learning the "art of war", the gentle technique of international mayhem. He's learning the kind of war the Russian guerrillas know, the kind the Marines in the Solomons had to learn, the vicious, treacherous kind of war where everything goes and it's man to man, kill or have your own throat cut. Sound funny? Mebbe it does when you think of Joe, middle aged and plump more than likely, with knots where his muscles ought to be and his chest where his stomach ought to be, out fighting man to man. But you've seen fat Russians, haven't you—knotty Norwegians?

Anyway, the Army doesn't think it's funny. The Army knows that in a country as big as ours, with 5,000 miles of coast line and thousands of sensitive points, the only ones you can count on to be at a certain place at any given time are the folks who live there. And Joe is the "folks". So the Army is counting on Joe to be *where* he will be needed *when* he's needed. And the Army is sending Joe to school to learn in a short period of time all he can assimilate about fighting. It's a school for militia, if you will.

The Army figures it this way. If they take the key men of these outfits and give them the fundamentals of training, they can go back and pass it along to the rest of their crews. Time doesn't permit a thorough and complete course of training but a lot can be packed into six days of ten hours each. The Army hopes to develop in these men an appreciation of the proper tactical employment of the State Guard units, at least. This tactical mission is *to observe* and *to report*, *to harass* and *to delay* the enemy.

In these days of fluid warfare with fast mechanized forces, airborne infantry and paratroops, this function of the State Guard becomes increasingly significant. No section of any country in this fast shrinking modern world can afford to relax in apathy with a false feeling of security from attack.

The Army knows that Joe America, the guy at home, the part-time soldier can be a whale of a big help if he can play his part. But Citizen Joe had a lot to learn before he could step out from behind the counter or the plow and handle such a part. This is where the school, of necessity, came into the picture. It is a relatively new idea in this country but we catch on quick and so has this idea. It has taken hold of the imagination of our people and has spread to five of the Army Service Commands, each of which is conducting schools for their own Joes. These schools are located in the First Service Command, the Second, Third, the Seventh and Eighth. They all cover practically the same ground and all have certainly the same purposes. They aim to give to the officers and non-coms of the State Guard, Minute Men, and other militia organizations, essential basic tactical training; to so present that training that

Learning the art of war: a gentle technique of international and personal mayhem

these officers and non-coms can apply it to their own men and communities in field problems on week-end exercises. And they aim to show and demonstrate to these men the materials and equipment needed and some which can be improvised for those exercises, and the plans for field training which can be applied to any community in the country.

These schools are manned by competent commissioned and noncommissioned instructors of the Army. Army quarters and equipment are utilized and picked demonstration troops show what not to do as well as the correct way of doing things.

The selection of students for the schools is made on a quota basis—proportionately divided between the states making up the Service Command—with a sprinkling from such other services as the Civil Air Patrol and, in some cases, police auxiliaries. The only requirements for the students are that they have the urge, the time and at least two stripes on their sleeves. It takes a "vacation" of about seven days time, six of which are wholly and entirely devoted to the school work. That's what it takes for Joe to get into the busiest week he ever spent—sixty full hours of basic tactical training in six very full days. But Joe loves it and he has a full realization as to what it may mean to him and his wife and kids not to mention his neighbors and his country.

When Joe and the other sixty-odd militiamen who go through the School each week have completed the course, at Fort Meade, Md., as an example, they have covered, though in a considerably quicker fashion, the same type of training given in an Infantry Officer's Candidate School. The same theory of instruction prevails. Like every officer in the regular Army, Joe is taught to think for himself, to originate, to improvise, *to use his six senses*. These requisites, they will tell you at Fort Meade, are the most important in any fighting man. Look at the Russians and you'll have to agree. So one of the first things that Joe is taught is to go back to the practicalities of his Boy Scout training. War always signals the return to the primitive. It is primitive in itself and must be carried on as such. It places a true value on the fundamentals which are too often lost in the luxury of peacetime.

The training and development of these *six* senses, dulled from disuse in our modern way of life, is given primary importance in the school work. It is explained that even in these days of modern high-powered weapons, wars are won as they have always been won—only when ground is taken and held by the infantry. In the event of an invasion of this country by paratroops, for example, the local State Guards would undoubtedly be the first forces to contact the enemy. They would probably be considerably outnumbered at first and would, of necessity, revert to their basic job of observing, reporting, harassing and delaying the Boche or Jap. This calls for scouting and patrolling and in these the full use of every sense God gave Joe is required. They play a vital role. Therefore the Army emphasizes the training and development of *six* senses. Five of these we all know—sight, hearing, smell, taste, and touch. The sixth is not too well known—it is common-sense.

In demonstrating how to develop the increased use of our six senses they actually revert in these schools to the old parlor games of passing objects from man to man blindfolded, sniffing and feeling and listening, trying to identify the objects and sounds and aromas. If it accomplishes nothing else it puts Joe on the alert for what is to come during the following week.

One of the most thoroughly covered subjects, as might be expected, is that of weapons. This coverage is designed to give a clear over-all picture of the arms used by the foot-soldier. It is not restricted to the arms now available to the members of the State Guards. Time is too short to make any attempt at an exhaustive coverage. Nomenclature, operation, and capabilities are stressed in such weapons as the sub-machine gun, the Garand, the M1 Carbine, light machine gun and the mortars. These are the weapons now supplied to the regular interior troops which will operate with and assist the State Guards.

Joe gets a more thorough coverage of the basic weapon of the guardsman, i. e., his own personal shotgun. The several types and varieties of shotguns are picked apart to show what makes them tick and why. And actual range demonstrations with various kinds

of ammunition bring out the capabilities as well as the limitations of this essentially close range killer. Joe is shown here how to make "dummy" shotgun ammunition for training purposes. He also gets instruction on the manufacture of the new "rifled slug" as a means of increasing the range and effectiveness of the shotgun.

Here, too, Joe gets something new in the way of wartime playthings in the grenade. New to Joe, that is. The grenade is almost as old as gunpowder, but so far in life Joe hasn't had much use for it. It is quite probable that the guardsmen will have these issued to them in the event of an unfriendly visit from the "master race". So it behooves Joe and his pals to know what is a grenade, why and how.

To help make the current American militiaman a real independent fighting man, a behind-the-lines warrior comparable to the heroic Red irregulars, Joe is put through a comprehensive course of sprouts in improvised weapons. Here is somethinge right down Joe's alley. Here Joe can spread himself, use his imagination and see the products of his own creation blast *his* enemy out of this "vale of tears" and this peace loving country. He is taught the finer points of manufacturing sudden death in the form of the Concertina (not a music-maker), the hairbrush grenade with which to part the Nazis' hair right through the skull, the Molotov cocktail, not be taken in small glasses before dinner, and the land mine, which is one type of mine not under the control of John L. Lewis. Joe is taught to make these inventions of the devil out of whatever materials he may find at hand; a scrap of wire, an ice cream container, a chunk of wood or a .30 caliber rifle cartridge.

There is never a lull in the school schedule. Here the part-time soldier must do a full-time job to grasp all he is taught and shown.

Tuesday for example is just typical. Joe starts off with a class in map reading. He learns that azimuth is not a wheezing cough but a map direction expressed in angular measurements. He learns that distance, direction, location, and type of terrain can all be accurately determined from a military map. He learns that a map is a "conventional representation of a portion of the Earth's surface as a plane surface". Joe learns a lot of things about maps that he never dreamed of before. He is impressed right off with the fact that the "military" considers the map a "fighting instrument". A map is as important to a military operation as one Siamese twin to the other. They just don't go alone. Even though Joe may feel that he knows his own bailiwick "like a book" because he's lived there all his life, he is given to understand that maps are indispensable. Combat produces many simultaneous, confusing details which maps help to keep separate. And in strange country, well, if Joe doesn't learn to read his map, he'll be sorry.

Then on this same Tuesday Joe learns "terrain appreciation". He learns to *see* things in the surrounding country that he never saw before. He analyzes that territory and selects the best route for a march, the point best suited for an attack, the area best set up for a stand. He learns to use the terrain to his own advantage and to the confusion of the enemy. He finds that soon he is coordinating his map reading with his terrain appreciation. The two work together, he realizes quickly, and he begins to see things with a greater clarity. You can't lose Joe now. He's got his feet on the ground, and his map and his eyes and a new understanding will get him and his troops anywhere he wants to go.

Joe's is a full-time job, but he spreads himself, uses his imagination, and is "on his own" in what could be close-order drill

In studying that terrain one of the most important things Joe learns on Tuesday is to study the cover available and to make use of it to the best possible advantage. He is told to forget everything he ever knew about close order drill when in battle. Now he scatters, takes to the brush or whatever other cover there is. He learns to "make himself and his men scarce" to fade into the natural cover offered, to lie down, when necessary, and crawl on his belly from one bit of cover to another. Close order drill teaches movement of men in unison, but out in the field in combat, men are "on their own" much of the time. At best they are many yards apart moving separately more often than together. Drill teaches straight lines and the use of the smoothest available ground. In war, straight lines are suicide and broken ground gives the best cover. Drill teaches men to obey definite limited, immediate orders, but in combat men must often think and act for themselves.

Joe has so many things thrown at him on his typical Tuesday that he wonders how he's ever going to be able to assimilate it. He's glad that he has those mimeographed sheets to go over when he gets out of his "nightmare" and has time to sit down and study them at a

more leisurely pace. He gets patrol work by day and by night, estimating distance and determining direction in the field. He gets espionage and sabotage. He sees training films. He attends conferences, lectures, field demonstrations, and supervised athletics. Yes, they give him time out for dinner but he has to hurry because there's a conference right after, and after that some more films to see—if he can keep his eyes open that long.

And at long last, there comes tattoo and call to quarters, but Joe doesn't need that because he's there already. Taps? Did they blow taps? Joe didn't hear it. Guess his snores drowned it out.

But that's only one of six solidly packed days in this memorable week of Joe's life. During the balance of the week Joe gets a lot of scouting and patrolling because that's what his job will most likely be. Then, too, he gets some actual combat work. He unlearns all he ever knew of the "Marquis of Queensberry's rules" and he takes on Judo in its place. He is carefully coached in this gentle art of emasculating an enemy and enjoying it. He is taught what not to write in a military message and how to write the information needed clearly, concisely, and briefly. He gets movement under fire, the art of camouflage, and more map reading. Then he marches out across country with his compass and tries to get where he's going. He gets more map reading and the tactical training of the individual and the small unit—combat training, battle formations, the rifle squad, the platoon, extended order, antiaircraft formations, counter-paratroop action. He studies the invasion of Crete. He learns night patrolling and reads more maps.

On another day he gets the theory of house-to-house and street fighting and then he goes out and actually does the thing. He studies the technique of the Army's demonstration troops and then tries his best to emulate it. He reads maps. He combats, he counterintelligences, he safeguards military information. He studies more motion pictures, reads maps.

Tattoo? Call to quarters? Taps? Joe doesn't remember hearing any of that. He hardly recalls "chow" call. He must have eaten at some time during all this but he doesn't recall just when it was. All he does remember is that confounded first call so early in the morning and then right on top of it that call to work—"drill", they call it in the Army.

The importance of knowing where and how to build field fortifications, road blocks, the making and setting of booby traps and land mines are impressed forcibly on Joe's mind. He studies the theory of infiltration and riot control. Things don't get boresome because the Army has a way of mixing them up. "Variety is the spice of life" they say, but to Joe about now it's the bane of his existence. Sometimes he ponders. "The proper technique of reading a map is to infiltrate the booby trap with the proper azimuth in the form of . . . ? No, that doesn't seem just right somehow. Let's see, how does that thing work?" Poor Joe! But still they cram it down his throat. Will it never end?

Yes, it ends, as everything must. And in retrospect Joe wouldn't take a lot for the experience. He's covered in six days what some take four years to get. Of course, Joe hasn't gone into it so deeply, but he's covered the ground and he's a better fighting man now than when he arrived at the Fort. Now, in addition to his native courage he has some basic knowledge of tactics to fight with. Now, when he's had a little time to "chew his cud" and get all this mess straightened out in his mind he'll be a far more deadly and dangerous enemy for the "master race" when it tries to convince him of its mastery.

Joe's in a fair way to be a soldier now and he's mighty grateful for the opportunity he's had of attending this school. From his talks with the officers who run the Third Service Command Training Center at Fort Meade, Maryland, Joe is greatly impressed with the responsibility that is his. Why else would the Army spend all this time and money during these difficult war times to train him and these other military men if it weren't important and if there weren't a big job for them to do? With Joe's new and better understanding of the Army comes a greater respect for it and he swaggers a bit in the knowledge that the Army in turn has a tremendous respect for Joe. The Army knows that Joe doesn't have to do what he's doing. He is doing it because he's a free thinking, free speaking, FREE American citizen who intends to stay that way come Hell or High Water.

The British Soldier

A MAN IS DRAFTED to the infantry. At enormous cost to the country he is provided with special clothing and equipment, drilled, exercised, and trained in maneuvers. Special corps of commissariat, the R.A.S.C., are detailed to feed and look after him. The R.A.M.C. look after his health. The Navy gets him across the sea. The R.E. make roads and railways and the transport division provides vehicles to get him to where he is going to start operations. He takes with him every conceivable article of equipment and daily utility which the experience of the Army Council has proved to be best for a soldier in the field. Also he takes a rifle and bayonet.

There is one object behind all this—one only. It is to get that man in the best possible health into the best possible spot where he can *fire that rifle to the best advantage*, and contribute to the demoralization of the foe.

And in all our talk about war effort and war preparation this seems to be the one thing which nobody ever thinks about. However well supported by our magnificent guns, tanks, and aeroplanes, of what use are all these millions of "riflemen" if they cannot shoot as well as a schoolboy with a bit of air-gun practice? They are really not riflemen at all, but merely gun bearers until they master fully the rifle they carry in their hands.

I tell you, from hard and prolonged experience, you cannot turn a man who has never handled a rifle into a skilled rifle-shot in the few hours of practice which comes in a war-time military training. It is utterly impossible. It must be done beforehand.—From A. G.'s "Book of the Rifle." Hazel, Watson & Viney, Ltd.

ARMED FOR SURRENDER?

By
LT. JOHN SCOFIELD

Concluding the timely topic started last month when further operations against the Italians seemed imminent

Twenty millimeter mobile antitank gun left by the fleeing Italians in North Africa. Below is the Italian 45 mm. Brixia, breech-loading mortar which replaces the hand grenade in any but small operations of the Fascists

Life photo, by Thomas D. McAvoy

IT IS EVIDENT in the number of machine guns developed and used by the Italians at one time or another that they, like the Japs, are worshipers of "fire power," and have relegated the rifleman to a position of secondary importance in providing protection for their "key" troops, the machine gunners. Both light and medium machine guns are liberally used by the Italians, in a baffling array of models and modifications. Calibers, too, are woefully inconsistent. The half-dozen different cartridges in use must create a nightmarish problem of supply for the ordnancemen of Mussolini's armies. Even the two rimless 8 mm. cartridges used in the 14/35 and 1937 medium machine guns will not interchange!

Most likely to be met on Italian battlefields is the bipod-mounted Breda light machine gun, which is issued in three models. The two in general use, designated as Models 30 and C, are chambered for the standard 6.5 mm. rifle cartridge. A model 1938 Breda light, probably never issued in quantity, is identical except for its caliber of 7.35 mm. Apparently, the Models C and 30 differ only in the presence or absence of a monopod support for the stock.

The light Breda is an air-cooled gun with a bipod permanently attached near the muzzle. Though normally fired prone at ground targets, the gun is sometimes mounted on a light tripod and the rifle-type stock exchanged for spade grips. The twenty-round magazine is

mounted horizontally on the right side of the receiver, and is hinged so that it may be folded forward and loaded with a hand charger. In the same weight bracket as most foreign light machine guns, a little under twenty-three pounds, the Breda can be slung conveniently on the back of the gunner, with the bipod legs folded out of the way against the barrel. A good feature of the light Bredas is the quick-change barrel present on all three types, which can be pulled out and a new barrel inserted in a few seconds. Barrels must be changed after firing as few as 150 or 200 rounds in long bursts, or as many as 300 at an intermittent rate. Maximum practical rate of fire with the Breda is about 150 rounds per minute, the "cyclic" rate is probably three times as fast.

The action of the light Breda has some interesting mechanical features. Operation is by combination of recoil, which unlocks the breech-block from the rear of the barrel, and the remaining force of the powder gases, which drives the spent case and breech-block rearward. To operate reliably with such a system, constant lubrication of both cartridges and breech-block is essential. This is accomplished by a pump built into the action of the gun which forces oil on each round as it lies in the magazine mouthpiece, and at the same time onto the face of the breech-block. When firing is stopped the breech-block is forward and a live round is in the chamber. A "cook-off"—ignition of the round in the gun—is prevented by a retaining catch behind the cocking handle, which can be used to hold the moving parts to the rear. Sighting equipment of the light Bredas is an open "V" backsight, graduated from 300 to 1,500 meters, and a barleycorn front sight, plus a battle-sight fixed at 300 meters.

Oldest medium machine gun in general use by the Italians is their 6.5 mm. water-cooled Fiat-Revelli model of 1914. The standard Italian gun of World War I, the model 14 is recoil-operated, weighs about ninety pounds on its tripod mount. Most alluring of its peculiarities is the "mousetrap" loading system of the gun: a fifty-round magazine with cartridges arranged in tiers of ten, moving laterally across the breech. Each vertical group of five rounds is fed into the chamber as if it were in a separate vertical box magazine, after which the magazine hops over to bring another stack in line with the chamber, and the process is repeated.

Relegated now to training-weapon status, the model 14 has been entirely superseded for combat use by the Fiat 14/35, which is nothing more than an air-cooled version of the 1914 gun, adapted to the Italian 8-mm. rimless cartridge. The receivers of the two guns are identical, but the 14/35 has a heavier air-cooled barrel and less complicated feed system utiliz-

Italian antiaircraft artillery is vain protection against the weight of Allied bombings. These German staff officers are probably examining a 75 mm. model

Photos by European Picture Service

Most generally used medium machine gun is this 14/35 Fiat 8 mm. gun. Loading is accomplished either from fifty round metallic link belts or from twenty round plate chargers. Left, is the Italian's 47 mm. antitank gun upon which they rely heavily for protection against Allied armor. The crew is armed with late model Carcano carbines for incidental, personal protection

Breda light machine gun, model 30, comparable in use but not so in effectiveness to our own Browning. The standard light machine gun of the Italians, it is of 6.5 mm. caliber, has a quick-change barrel and magazine attached on the right side of the receiver

ing metallic-link belts or a twenty-round plate charger. By no means the best of the Italian mediums, the model 14/35 is most frequently encountered in the field simply because of the number of these obsolescent guns available to the Italian Army.

New standard medium machine gun is the 8-mm. model of 1937 Breda, not to be confused with the 1937 *light* Breda in 6.5 mm. caliber. Gas-operated and air-cooled, the Breda 37 medium is used on a tripod mount, feeds from twenty-round plate chargers inserted from the left side of the receiver. A running-mate of the old 1914 Fiat-Revelli in peculiarities of loading system, the Breda 37, instead of ejecting its empties, neatly replaces each of them in the separate compartments of the plate charger.

Ammunition for this and the 14/35 Fiat, though of the same caliber, is not entirely interchangeable. Both of these 8 mm.'s are closely akin to the German 7.92 mm. rifle cartridge, although the German ammunition cannot be used in the Breda 37. All of these 8 mm. cartridges are loaded with a boat-tail bullet very similar to our 173-grain M1.

Rated in importance somewhere between the 14/35 and Breda 37 is the Fiat model 1926 medium, a recoil-operated, air-cooled gun with thick cooling flutes running lengthwise of its heavy barrel. Gun and mount together weigh only twenty-three and one-fourth pounds, unusually little for a tripod-mounted type. The 1926 Fiat is supplemented by a 1928 model with a heavier barrel and spade grips in place of the peculiar half-moon shoulder piece of the '26 Fiat. Neither appears to possess any great virtues, and chances are that relatively few are in use.

Various other models of ground, tank, aircraft and AA machine gun serve to complete the confusion. The gas-operated SIA, a 6.5 mm. ground gun with a peculiar cradle mount which can be slung over the shoulders for carrying, shows close affinity with the true light machine gun—it is adapted to full or automatic fire, and weighs only twenty-three and one-half pounds. Little used nowadays, the SIA is easily recognized by the close-set cooling rings on its long, thin barrel. One might even find on the 1943 battlefields some of the big, heavy Colt machine guns, made for the Italians during the first World War.

Standard as a tank weapon, and used also as an infantry machine gun, is the Breda model 38. Chambered for the same 8 mm. cartridge used in the 37 Breda medium ground gun, the 38 differs in its use of a twenty-four-round vertical box magazine. It is standard equipment in Italian light and medium tanks of 1939 and 1940 vintage. Nearly identical except for size, the 13.2 mm. Breda 1931 is another gas-operated, air-cooled gun. Weighing eighty-four pounds without mount, the Breda 13.2 is also primarily a tank gun, although the Italians mount it for antiaircraft use as well. Like the Breda 1938 tank gun, this heavy-caliber piece is fitted with a straight-up-and-down box magazine sitting on the top of the receiver, holding twenty of the big 13.2 mm. (.52 caliber) rounds. This gun is almost identical with the Japanese Breda tank and AA gun of the same caliber.

Breda machine guns also are the mainstay of the Italian air forces. Two models, differing mainly in caliber, are standard in their planes. The lighter of the two is chambered for the Italian 7.7 mm. cartridge, which is directly interchangeable with the rimmed British .303. The development of this Italian ammunition, which came about late in World War I as a result of Italian participation on the Allied side, stems from the fact that the British were forced to supply arms and ammunition to offset heavy Italian losses of materiel. To maintain these British arms, the Italians turned to the manufacture of .303 ammunition, relabeled 7.7 mm. and ultimately, to the manufacture of the weapons themselves. Since that time the 7.7 has been widely used in Italian aircraft armament. Various bullets, ranging in weight from 155 to 179 grains, are used in present loadings. Velocities of the Italian .303's average about 2,400 feet per second.

Both the 7.7 and heavy 12.7 aircraft guns are recoil-operated, belt fed and air-cooled. Mounts include one with synchronizer and charger for aircraft use, another with charger in a fixed mount, and a flexible type in which the gun is fitted with a trigger guard and grip.

The two mortars used by the Italian Army span the entire gap between orthodoxy and near-freakishness. One, their 81 mm., is like the infantry mortar of virtually every other world power; the lighter of the two, a 45 mm. piece, is about as far from the usual concept of an infantry mortar as it would be possible to go. This latter, the Brixia model of 1935, is the standard light mortar, or properly, grenade thrower, of the Italians, and has been used in vast numbers wherever Italian armies have fought. Thousands of these little guns fell into the hands of the British in North Africa, where they were promptly turned in a new direction and trained on their former owners. So many, in fact, were captured in North Africa that their use by British troops all but standardized the Brixia for a time as a regulation Allied weapon!

Breech-loading and trigger-fired, the Brixia is mounted on a folding tripod, with a padded frame hinged to its rear leg. When the mortar is in firing position the pad acts as a cushion for the firer's chest, and when folded for transport it eases the load on his shoulders. The breech-loading feature is unique. Both barrel and breech-block are so arranged that they slide within the body or outer tube of the mortar, under the control of a hand-operated lever. Forward movement of the lever causes the barrel to slide ahead, clearing the bomb-feed opening in the outer tube, and at the same time withdrawing the breech-block behind the cartridge feedway. Extraction and ejection of the empty propellant-cartridge case, a ".50 caliber" blank affair, is accomplished during this movement. The bomb is then dropped by hand through the oval port in the outer tube. A complete rearward movement of the actuating lever serves to return the barrel to its original position, sliding it over the live bomb, feeds a new cartridge into the breech-block chamber from the ten-round magazine and, at the end of its travel, fires the mortar.

Range control is secured both by elevating gears, which control the angle of the tube, and gas ports which, by allowing more or less of the gases generated by the propellant cartridge to escape, regulate the velocity imparted to the bomb. Weight of the Brixia mortar and its mount is only thirty-four pounds, making it an easy one-man load. The Brixia can be fired with considerable speed; twenty-five to thirty bombs a minute can be launched if there is no necessity for resighting between rounds.

Brixia bombs themselves are one-pound affairs, with an extreme range of nearly 600 yards when the gas-escape ports are closed. By opening the ports and increasing the angle of the tube the piece can be used for high-angle fire under 300 or 350 yards. These short-finned Brixia bombs gain added fragmentation from a coil of steel wire wrapped about the charge within the thin steel casing.

Italian mortarmen undoubtedly have equal justification in praising or damning the Brixia. Used both in Russia and North Africa, it has proved a splendid weapon in many respects. Steady in action, easily carried and with a relatively high rate of fire, it appears largely to take the place of fragmentation grenades in the Italian Army. On the liability side of the ledger, the design of the Brixia is far too elaborate, and must be very costly to manufacture, even in mass production. Unnecessarily complicated and delicate, it probably is subject to constant malfunctions and the breakdowns incident to improper use. The bombs themselves are small, with a limited danger area, and must be sent over in showers to effectively dislodge personnel.

Heavy infantry mortar of the Italians is an 81 mm. Stokes-Brandt type, remarkably similar to our American M1. Adopted in the same year as the Brixia 1935, the Italian 81 weighs 135 pounds set up for action. Two weights of high explosive bomb are used, 7.2 and 15.1 pounds. The lighter of the two has a maximum range of well over 4,000 yards, while the fifteen-pounder can be lobbed a mere 1,600. Rate of fire with the model 35 is estimated at about eighteen rounds per minute.

For protection against Allied armor the Italians rely heavily on a Swiss design—the 20 mm. Solothurn anti-tank rifle, which is handled in much the same manner as the lighter German Pz.B.39 and British Boys rifles. A 120-pound recoil-operated semi-automatic, the Solothurn is generally shoulder-fired, provides a good two-man load. Ammunition is fed from a ten-shot box magazine, which is usually filled with only eight rounds, and pops out of the magazine slot after the last round has been fired. Over seven feet long, the Solothurn is normally mounted on a bipod and butt-rest combination, but sometimes is used on a low two-wheeled carriage with split trail. An internally adjusted scope sight, low on the left side of the receiver, supplements the Solothurn's leaf rear and flat-top post front sights. Capable with a good gunner of better than twenty shots a minute, its velocity is rated close to 2,800 feet a second with both armor-piercing and high-explosive projectiles.

Heaviest of popular Italian antitank guns is their 47 mm. Breda, a 660-pound weapon capable of throwing an average of twelve to fourteen six-and-a-half-pounders a minute. Mounted on a split-trail carriage, those captured by the Allies in North Africa, along with nearly everything else used in the mid-African wastes, were painted an inconspicuous sand-color. Like a pack-gun, the 47 can be disassembled, bundled up for parachute landings with

(*Continued on page 25*)

Like virtually every other warring nation the Italians use the famous 81 mm. Stokes-Brandt mortar

Life photo, by Thomas D. McAvoy

THE AMERICAN RIFLEMAN
A SCOPE'S-EYE VIEW OF OUR NATIONAL HERITAGE·
MINNIE HA-HA! X!!*
GOT A LEETLE HOOK ON THET 'LIN!
EARLY AMERICANA:—THE X-RING WAS A RING OF PAINT AROUND AN INJUN'S EYE ··· X-RING, EX-INJUN!
I KNEW I SHOULDN'T HAVE DRINKED THAT ROOT BEER!
THE 400-POSSIBLE·· (YOU GUESSED IT! WE MEAN HIS WEIGHT)
READY ON TH' LEFT— SHAKE A LEG, PETE!
LEG MY FOOT! I'M SHAKIN' ALL OVER!
RANGE OFFICER
THIS HERE AMMYNITION SITUATION IS GETTIN' SERIOUS!
YEAH! I HEAR THEY'RE GOIN' TO USE BOWS AN' ERRORS AT CAMP PERRY THIS YEAR
OR SHOOT CRAPS!
IT USED TO BE .22 L.R. BUT HE'S WORN IT UP TO 45-70
DAILY SUN
THE FANATIC·
BETWEEN RELAYS· THE OLD GUARD·
JICK CALKINS
WHEATON RIFLE CLUB
(BUCK ROGERS)

The Fourth Requirement

By WALTER F. ROPER

In September, 1937, while watching the tryouts for the International Pistol Team at Camp Perry, a chap alongside of me looked up from his 'scope and said, "Man, is that Elliott Jones holding them today, he's just made his third five-shot possible!"

I, too, had been watching Elliott's targets and marvelling at his shooting, but I was thinking of other things he was doing perfectly besides the "holding" mentioned by my fellow observer. I could not refrain from saying, "He's doing a lot more than just holding them right, my friend."

A month after the matches I received a letter from my neighbor on the observation line in which he said something like this, "Ever since Perry I've wondered just what you meant by that remark about Jones' doing a lot more than to hold them perfectly. Just to satisfy my curiosity will you give me the dope?"

That letter has led to an interesting correspondence during the past five years. My friend reports that he was able to make a decided improvement in his shooting by working on the point I then had in mind. I believe that other shooters may also be interested.

There is no getting away from the fact that to shoot a pistol well one must hold steadily, sight accurately, and press the trigger without disturbing the pointing of the gun. These are the so-called three BIG requirements for good shooting. Even if all of these are done perfectly, they are not enough. Unless what I believe to be the most necessary thing of all is done right, poor shooting will result. I am talking about keeping constant the resistance to the movement of the gun: the movement that takes place before the bullet leaves the barrel. The shooter must neutralize this movement by resistance that must be kept constant for each shot. Most coaches mention that uniform hand position and a tight grip is necessary, but these aspects of shooting are treated as of secondary importance. As a matter of fact, this is just as important as any one of the big three requirements. To show just how important they are I propose to resort to figures and I assure you the results will be surprising. By giving attention to these principles, a real gain in scores can be made by most shooters.

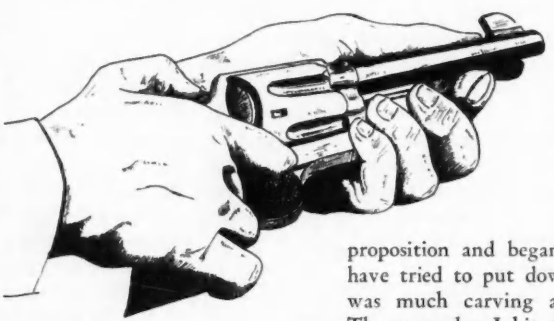
Let us suppose that we are shooting a .22 caliber S.&W. Perfected Model Single Shot Pistol at fifty yards. The bull'seye at this range is, of course, eight inches in diameter, and in going the fifty yards the .22 Long Rifle bullet will drop about five and one-half inches. From this we know that when the bullet leaves the muzzle, the center line of the bore must be pointing at a spot five and one-half inches above the center of the ten ring if the bullet is to hit the ten ring in the center. Now, from what a great many shooters have said I believe the great majority of pistolmen picture the bore as pointing at this spot while they are aiming and think that the bullet leaves the barrel before any movement of the gun takes place. If that were a fact, variation in the position of the hand on the stock or tightness of the grasp would have no effect whatever on the flight of the bullet. It would be simply a question of holding steadily and squeezing off the shot. Unfortunately, however, that is not all. The gun moves while the bullet is pasing through the barrel. Any variation in the resistance to this movement will have an effect upon the accuracy of the shooting.

We could, by determining the "Zero Sighting" of our gun and applying the most useful formula worked out by my friend, the late Mark Patterson, find out mathematically just where the center line of the bore must be pointing before discharge takes place in order to put the bullet in the center of the ten ring. We would find out just how much the muzzle of our gun rises before the bullet leaves, but, as we already have the gun sighted for fifty yards there is a more simple way to get the information we want. All we have to do is to measure the height of the front and rear sights above the center line of the bore. On my S.&W. pistol the front sight is one sixteenth of an inch higher above the center line of the bore than the rear sight. This means that the bore is aimed at a spot below the point at which aim is taken. As the sights are ten inches apart, and as fifty yards is 1,800 inches, we can find just how much below the point of aim the bore is pointing by multiplying one-sixteenth of an inch by 1,800 divided by ten which equals eleven and one-fourth inches. As my pistol is sighted for a 6 o'clock hold and the bull'seye is eight inches in diameter, my point of aim is four inches below the point I want to hit. As the bullet drops five and one half inches below the spot at which the bore is pointing when the bullet leaves, it is obvious that the center line of the bore must rise from a point eleven and one-fourth inches below the bottom edge of the bull's-eye to a point five and one half inches above the center line of the ten ring or a total of twenty and three-fourths inches on the target at fifty yards.

A little consideration of this matter of gun movement will show that it can occur in three ways. First, the gun can slip in the hand, second, the gun and the hand can rotate about the wrist joint, and third, if the wrist is not allowed to move or the gun to slip in the hand, the whole arm can rotate about the shoulder joint. Actually, regardless of the stock used, a shooter will grip so tight that slipping of the gun in the hand will not occur. Because he has been taught that a relaxed condition of his arm is desirable, the rotation will be about the wrist joint. That means that the center of rotation is about fourteen inches from the muzzle of the ten inch barrel single shot we are considering. The upward movement of the muzzle to

give twenty and three-fourths inches at fifty yards will, therefore, be $\frac{14}{1800} \times 20.75''$ which works out to be sixteen hundredths of an inch or about five thirty-seconds. Putting this all in the fewest possible words we can say that when our pistol is correctly sighted to make center tens at fifty yards using a 6 o'clock hold, the bore is pointing eleven and one-fourth inches below the point of aim. Our bore must be pointing at a spot nine and one-half inches above the point of aim when the bullet leaves, so the muzzle must move upward, while the bullet is passing through it, enough to make twenty and three-fourths inches at fifty yards. With the gun rotating around a point fourteen inches back from the muzzle, the muzzle must rise about five thirty-seconds of an inch.

Suppose we move the hand on the stock between shots or change the firmness of our grasp on the stock between shots. That will change the resistance to the recoil and to the upward movement of the muzzle. Suppose we change the resistance only a little, say enough to make a ten per cent change in that five thirty seconds of an inch. That will shift the point of impact of the bullet at fifty yards about two inches which added to our errors of sighting, holding, and trigger squeeze will be enough to give us a "white" shot and wreck our scores. Doesn't it begin to look as if a uniform position of the hand and a uniform grasp is decidedly important? Now, by the sighting triangle method of testing, it has been found that a shooter capable of making an average score of eighty-five can sight well enough to make a one inch group at fifty yards. Machine rest shooting proves that the average handgun will make one and one half inch groups at fifty yards. A score of eighty-five means that an eight inch group is about average. A shooter's errors of holding, trigger control and the error caused by variation in the hand position and grasp must, therefore, account for the difference of eight inches less two and one half inches which is five and one-half inches. As even a ten per cent variation resulting from a change in hand position or grasp firmness means two inches at fifty yards, it is certain that this matter of hand position and grasp is AT LEAST as important as either holding or trigger control.



Now let us see what conditions will make uniformity of hand position and tightness of grasp easiest to obtain. The job is simply to support the gun so that the barrel will be approximately horizontal so that tight gripping, which results in trembling, will not occur. The grasp must be light enough though that the gun won't slip in the hand when the sudden jerk resulting from recoil takes place. The second requirement is easy, for a stock so shaped that it really fits the hand and is large enough to prevent movement of the gun in the hand, will cause the gun and the hand to move as one when recoil comes.

That does not necessarily mean a stock such as is used on the foreign free pistols, although they do perfectly the job for which they are designed. With the free pistol best shooting results when no conscious gripping at all is required. The first requirement, that of supporting the gun, can be done in two ways. First, as is necessary with all factory stocks with which I am familiar, by simply gripping the gun tightly enough to support its weight to prevent it from tipping downward at the muzzle. Or we can provide a fulcrum or supporting point to rest upon the second finger of the gripping hand and reduce the required strength of grip only to what is required to prevent the gun from rotating around the fulcrum. The center of gravity of most guns lies a very little forward of the position taken by the second finger when the gun is grasped. In fact, it is just enough forward of it to give the gun the slight tendency to tip forward enough to make the gun balance properly on the second finger. The solution of a uniform hand position and a sufficiently firm grasp is having a stock that is properly designed and made for the individual shooter's hand.

During the past twenty years I have talked with hundreds of pistolmen about this part of the problem of shooting a pistol. I am glad to say that attention to this has helped a great many of them to improve their shooting. Instead of referring to any of the reports they have made, I am going to tell my own experience in the pistol game.

In the early twenties I joined the Springfield Revolver Club and found myself one of the bunch of shooters who really made scores. I soon reached the degree of skill which enabled me to average 88 x 100 at either the indoor range of twenty yards or on the fifty yard outdoor range. Like thousands of others I could not seem to get my scores past that eighty-eight average. It was then that I began really to study the requirements for good shooting. I had my pistol tested for machine rest accuracy, tested my sighting ability by sighting triangles, spent hours developing the ability to press the trigger properly and, other hours dry shooting to develop better holding and coordination of the three essential requirements. My scores did not improve enough to change my average a single point!

That left me with two possible conclusions. First, that I could not shoot a pistol better than an average of eighty-eight, or I could look for some reason I had not thought of as the cause of my failure to improve. Not wanting to admit that I couldn't ever shoot any better, I accepted the second proposition and began a study such as I have tried to put down here. The result was much carving and trial of stocks. Then one day I hit the combination and my scores went up over ninety AND STAYED THERE! I suggest to anyone wanting to make a real improvement in his pistol shooting that he get busy on the south end of his shooting iron as he will find that right there is one of the biggest chances to improve his shooting—and fortunately—the easiest of all to make.

It's a matter of building a gun stock that will contribute to efficient, uniform holding. This is not a problem peculiar to pistol shooters. Riflemen, skeet and trap shooters have it. Study the guns at any trap shoot and marvel at the wood butchery. Then proceed with your own hand grips until you get what you are looking for.

Cannon for Canada?

By H. V. STENT

IT HAS BEEN RATHER APPALLING—no lesser word is adequate—to me to observe the excessive emphasis now placed in many sporting magazines on the use of very powerful rifles for big game. Only the latest super Magnums will reach our coy game animals, we are told,—or bring to bag anything larger than a woodchuck. Just the other day I saw a letter from a fellow who refused

to believe a yarn about a hunter killing five grizzlies at close range with a .30-30, on the grounds that a .30-30 hasn't pep enough to kill a grizzly bear at any range! Imagine it! Hell, man, plenty of trappers and prospectors roam the Rockies armed only with light .25-20 and .32-20 rifles—even revolvers—and drop any game they want from moose down. Compared to these puny arms the .30-30, with nearly a ton of striking energy and penetration enough to shoot clear through a 10-inch pine tree, is a veritable elephant gun.

Up here in Canada—is it because we don't read sporting magazines so much?—rifles of the .30-30 class remain the most popular of all guns for big game. Maybe we're behind the times! But when such guns kill game dead, could a Magnum kill it any deader? And they kill with one shot, too. The men who use them hunt for meat, usually, and would not think of using a gun that wouldn't get that meat with one shot.

Just to check up on this .30-30 business, I recently asked a number of experienced local hunters their opinions. "Will rifles like the .30-30 kill a deer with one shot? Will they knock a deer down if they hit him squarely in the body or neck?"

The answers? Generally a surprised, "Hell, yes!" Some added details of memorable shots in proof; most agreed that such guns will drop a deer as far as one can hit it. So many looked disgusted with me for having asked such a superfluous question that I in sheer self-defense soon stopped my Gallup Poll.

Of course, I did know better. I have seen enough deer killed, big mule bucks put down at ranges up to 300 yards in these semi-open Okanogan Hills, to know. I have known enough trappers and prospectors of the north woods who shot moose regularly for meat who never had any fault to find with their .30-30's and .32 Specials and .303 Savages. They use these same guns for elk around here without a second thought. The first dead elk I ever saw was killed by a forest ranger who had a .280 Ross hanging on his cabin wall—equal to the .30-'06 in power and velocity, with a great reputation as a killer—who preferred for elk a .32-55 which is well below the .30-30 in ballistics.

Chris Reinhardt sticks to his .30-30 carbine when hunting grizzly in the Monashee. Jack Thomas, who has hunted and guided all over southern Alberta and British Columbia and has probably killed well over one hundred head of game in his twenty-five years of hunting, would be satisfied with a .30-30 or .250-3000 for any game in America. "It is a bit light for grizzly," he says, but he has killed a good many with it and would use it without hesitation. This list of shooters could be multiplied indefinitely. The woods are full of them.

I am not trying to make the .30-30 out to be any wonder gun. I am not a .30-30 fan myself and I know that the gun has definite limitations, as all guns have. But surely there can be no question that the .30-30 class of rifles will kill any game we have if the shooter does his part, and that it is adequate for deer under all ordinary conditions. With deer may be included other game animals of similar size and vitality: mountain sheep, mountain goat, black bear.

In the .30-30 class may be listed a number of so-called "light rifles," not only the .32 Special and .303 Savage, but also the .250-3000 and its more stylish near-duplicate, the commercial .257 Roberts. If a man wants a fast, flat-trajectory cartridge, especially for the mountains, one of these may well be his choice. Everywhere in Canada that I've inquired about it, even in thick bush country, the .250-3000 is highly regarded as a killer. Many experienced hunters use it for all game.

Animals of the deer class are by far the commonest of big game. For a hunt in Canada you might be well advised to carry one of the above "deer rifles," and if you get a chance at bigger stuff just shoot a little more carefully. There are scores of hunters here who do just that with great success. But there are also Canadian hunters who think a heavier rifle is desirable for moose, elk, caribou, or grizzly. If you feel the same way, you might do worse than consider the type of gun they use.

There is a growing number of .30-'06 rifles in use. Many swear by it, although its performance has never greatly impressed me. By far the most popular rifle up here when you get above the .30-30 class is the .303 British. It is just as highly regarded here as the .30-'06 is in the United States—or was before the present Magnum wave set in. It is generally considered amply powerful for the biggest game. Its usual game load is a 215 grain bullet at from 2000 to 2200 f.s. It seems to have plenty of punch for moose and big bear, and plenty of range for long shots at sheep and goats in the mountains or at caribou across the northern barrens. For this latter purpose Bill Arnold prefers it to the .30-'06. The latter has too much kick and jump to suit him, and his winter's supply of caribou meat—Bill traps "north of the game laws"—is obtained just as well with the .303.

There is a number of other rifles of similar power which have proved themselves on big game here: .30-40, .300 Savage, 7mm., .33 Winchester, .35 Remington. They all hit with plenty of smash. The .33 Winchester and .35 Remington are two of the three cartridges that the gun editor of Canada's most prominent sporting magazine named a few years ago as the only ones about whose killing power he never received any complaints. The third, please note, was the .38-55. The .30-40 has made a great name for itself as a moose gun in the north woods. The 7mm. and .300 Savage are both popular in the mountains. George Harrison, who must have seen two hundred head of game killed while guiding in the Rockies, speaks highly of the .300 Savage. He once saw a man shoot three grizzlies with just four shots from this gun at a range he estimated at 300 yards. You couldn't ask much more than that of any gun, could you?

Why, then, do some sportsman-writers recommend much more powerful arms for a hunting trip to Canada? The main reason, I suspect, is because they personally like them. They like the roar and kick and awe-inspiring impressiveness of the big guns. That's perfectly human.

There are other reasons. More powerful weapons do kill better—a little. But the difference is not so great as is often made out. Guns like the .300 Savage, 7mm., .30-30 have plenty of "zoop" in their own right. At long ranges the extra power of the Magnums is noticeable, but is that necessary? It takes a mighty good shot to kill game at any range over 300 yards, outside of an armchair. The general impression among practical hunters here seems to be that the more skillful the marksman, the less need of power in the rifle. Some of the expert shots up here can drop game with .30-30's and .25-35's, not to mention piddling little .32-20's, out at far ranges in a way that would make many a Magnum toter green with envy.

Mind you, I'm all in favor of one Magnum idea, that of large caliber bullets being more effective. The old .38-55 was probably the best killer of all the cartridges made for the Winchester 94. In the woods of Ontario and New Brunswick you'll find plenty of old-timers still using .38-55's, .38-72's, .40-72's, .45-70's and getting game with them more reliably than with any small bore. Often the .35 Remington and .33 Winchester kill better than the .30-'06. There's a lot more to killing power than is shown in ballistic tables.

But I don't see any need for so much "poosh" behind said bullets, whether large or small caliber, as the Magnum lads desire. As far as more powerful rifles are better killers, I'm wholly in favor of their use both for the sake of getting trophies more surely and for conserving our game supply by preventing the escape of wounded animals.

But, the power of a rifle has not nearly so much to do with the killing of game as the placing of shots. That is something that should be written in letters of fire in every hunter's mind. There isn't much question but that the increased recoil that inevitably goes with increased power is only too apt to cause flinching and bad shooting. That is one of the reasons why lighter rifles are used by men who live in the woods and in the mountains. They get more game with the gun that is more comfortable to shoot and many find that even the .30-'06 has too much kick for comfortable use.

The man who is shooting the big rifles weekly, if not daily, becomes hardened to recoil. In my experience the average hunter doesn't do this and can't afford to, and you can't make him do it. So if he gets too big a rifle for his once-a-year hunting trip, he's going to flinch and miss with it. It is my opinion that rifles of the .30-40, .303 British, .300 Savage class have fully as much recoil and muzzle blast as the average man can handle. Many hunters will be better off with the .250, .257, or .30-30.

No gun will necessarily drop your game if you don't hit it right, but don't let the Magnum boys kid you that with the big guns it doesn't matter where you hit your game or at what range. That impression is certainly given by some of the stuff we read and it is both false and decidedly unsportsmanlike. For you'll lose game even with a Magnum when your bullet does not strike a vital area. Those Magnum users who admit this call it an indication that even their guns are none too powerful. To me, it is just another proof that any bullet, however much power behind it, must be properly placed to kill.

Do you want this demonstrated to the nth degree? Leslie Simson once shot a charging African lion with a .577 Express, a gun that fires a 750 grain bullet with a wallop of some 7000 foot pounds, not to mention some

90 pounds of recoil on the receiving end, surely the great grandpappy of all Magnums. His bullet hit the lion below the left eye, raked its body from end to end and came out its flank; and that lion not only did not drop, he never even faltered in his charge. But for a second bullet that reached the brain, the animal could have killed every man there.

No, brother, the biggest guns are not infallible at any range, and as for doing better long range shooting with a bigger rifle that, too, is open to doubt. You've got to hit your game to kill it, and hitting is harder with a hard-kicking gun than with a lighter one. If you frequently missed or slightly wounded your game at ranges over 200 yards before, don't think that buying a Magnum will enable you to kill it at 400 and 500 yards, or you'll have a rude awakening.

And shooting at long range isn't necessary, you know. If you look for them you can find short range shots, too, and find them more often. Right here we have country where deer could be seen a mile away in open stretches, but they are more often shot at ranges under 100 yards than over it.

In the mountains, game is usually chanced on at comparatively close range. The half-mile shots you imagine at sheep and goats are the exception, not the rule, according to hunters who live in that country. The animals are sometimes seen at long range, yes, but in most cases they can be stalked to much shorter distances, or if they disappear, closer chances will present themselves. I am satisfied that a man can go to any Canadian big game area, including British Columbia or the Alberta Rockies, pledge himself not to shoot at ranges over 200 yards, and average as good a bag as the next fellow. Even in the mountains the hunter who is a quick and fairly accurate offhand shot will get more game than the slow, very accurate prone shooter.

Of course, if a man wants to carry the bigger guns and try the long, hard shots, there is no law to stop him. Undoubtedly there is the odd hunter—one in a hundred, perhaps—whose skill justifies him in so doing. He can use a long range rifle. Or if you are the excitable type that just has to bang away at game regardless of where you hit it, or how far away it is, then for Pete's sake get a Magnum—or a guardian.

Here in Canada most hunters of experience like a rifle that is comfortable to carry and to shoot, with the .303 class about tops. If game is seen at an excessive range, they usually try to stalk closer. It's fun trying to outwit a wary animal or let it go to wait for a better chance.

For *such* shooting these rifles seem quite powerful enough. By such shooting they certainly get game. I suspect that you'll find seasoned hunters everywhere doing the same. It doesn't require fancy marksmanship. It does take sense and self-control, and these qualities with a comfortable rifle of moderate power will get a lot more game than a Magnum without them.

Armed for Surrender?

(*Continued from page* 19)

air-borne shock troops. Optical sighting equipment and fifty degree traverse, minus ten to plus sixty degree elevation adapt it to both antitank work and as a versatile infantry-support gun.

At least two other types of antitank guns are met with in the Italian forces. One, midway in caliber between the Solothurn 20 and the 47 mm., is used in Italian tanks as well as on a field mount for protection against enemy armored vehicles. Supplementing this dual-purpose 37 mm. gun, which was borrowed from the Germans, the Italians have a 20 mm. model 1935 Breda, used alternatively as antitank or antiaircraft. Able to loose 120 of its five-ounce projectiles a minute, the gas-operated Breda 20 has an effective ceiling of only about 2,800 yards, is used mainly as protection against low-flying aircraft. Weight of the gun is 677 pounds; cartridges are fed from a twenty-round plate charger. A similar 20 mm. gun, manufactured by Scotti, is apparently used only as an antiaircraft weapon. Standard light AA gun of the Italian Army, its characteristics of fire closely resemble those of the Breda 20.

Heavier Italian AA runs the gamut from a Scotti 37 mm. to the big 1929 Orlando 102 mm. gun. At least four types of 75 mm. AA's are used, along with a 40 mm. Vickers-Terni. Italian claims have the Orlando reaching an effective ceiling of well over 30,000 feet while their 75 mm. Ansaldo 1933's, of which two models are in service, are considered good to a maximum of about 36,000.

Italian infantry units make much of an 850-pound 70 mm. gun, which they use along with their standby models of 1906, 1911, and 1912 field guns. The latter have fallen into British and American hands in droves. One estimate had the Axis losing 1,500 guns in Tunisia alone; chances are the bulk of these guns were Italian 75's. Already the British have used many of them and report them to stand up well under hard desert usage. Also in service in Libya and Tunisia was a new Italian 75 mm. self-propelled gun. Apparently a good many of these were with the Axis armies in North Africa, and must now be Allied possessions.

All-in-all, the Italian, like the wily Jap, is reasonably well armed, though not a single piece he has can be called outstanding, and as a whole his weapons must be rated lowest of those standardized by any of 1943's major belligerents. In going over the multitude of models used by Mussolini's soldiers, one is struck not only by the fact of their generally poor workmanship but by the almost complete lack of foreign designs. Italian models, Berettas and Bredas, Carcanos and Fiats far outnumber the Swedish and Swiss pieces which have been so widely adopted by Italy's partners-in-crime. The very fact of this plethora of mediocre native design points a small moral—a nationalistic spirit within her arms-designing fraternity which has saddled Italy with a hangover of semi-obsolete models and outmoded systems, while the armies beside her and against her are picking up and at least trying anything which appears to give promise of superiority. Apparently this unwillingness to adopt the arms of another nation or to license models from the Swiss or Swedes, as have her partners, does not extend to what she can borrow. Standard German arms, perhaps sent over the Alps to Mussolini by godfather Adolph, have appeared repeatedly in the hands of Italy's sorrowful Antonios and Pietros.

ANTIAIRCRAFT

By WALTER McCALLUM

TODAY AMERICAN ANTIAIRCRAFT, with the aid of intricate detection and range-finding devices utilizing Radar, a hitherto hush-hush weapon in the Allied victory arsenal, tracks enemy planes to their doom and knocks them out of the sky with well-aimed fire.

The 90mm. happens to be the big gun of our antiaircraft but it is not alone. It will reach far up into the sky, blasting enemy aircraft by night or by day. It is the long range weapon of antiaircraft, but there are other and faster firing weapons. These are the 40mm. Bofors, a fast shooting piece with a capacity of about 120 shots a minute and the powerful .50 caliber machine gun, spouting pellets of death at the rate of 650 shots a minute. An enemy airman who dared dive on a target protected by these weapons could count his life in tenths of seconds.

The gunners themselves, carefully trained in antiaircraft technique, speak in hushed, reverent terms of the new 90mm. antiaircraft rifle. It is comforting to know that this weapon will toss a shell as far in the sky as aircraft can travel and bomb effectively, and the shell scatters in a tremendous burst effective over a wide area. The gun itself, combined with its sighting and detection devices, is marvelously accurate. Its rate of fire is so swift that it is the most lethal long range weapon against aircraft in use by any army.

Even bigger guns than the 90's are being used. In some areas, for example, antiaircraft gun crews are being trained with 105mm. rifles. In Tunisia antiaircraft kept right along with field artillery, ringing the massed 105's and 155's with a protective curtain of antiaircraft fire against enemy dive bombers. Heinie soon found it wasn't healthy to dive on an American field artillery emplacement.

Suppose enemy aircraft bent on a bombing mission came over at night. The Radar devices, the height and range-finding devices, and the searchlights really team up. It isn't necessary, for example, that the gunner actually see the target. Radar will put the guns on the path of the fast flying bombers but visual recognition helps. The searchlights, manned by non-commissioned officers trained in the work, shoot 800 million candlepower beams

Men and material and practice are responsible for American success fighting Axis planes. Here is what is done and how.

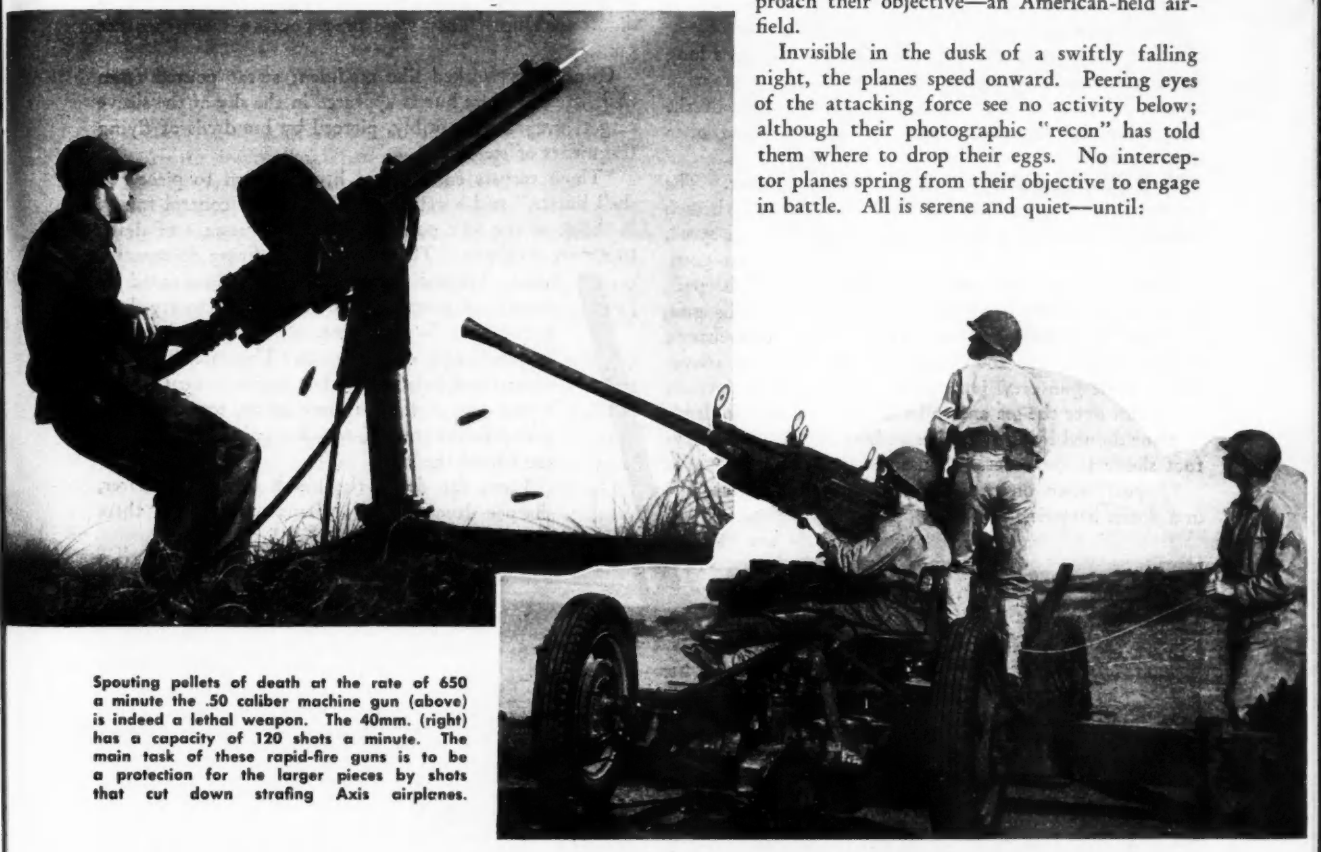
of glaring light into the night sky, pinning enemy bombers in the flood of light, dazzling them with the glare, and making them easy prey for the hungry guns or for night-fighting airplanes.

Closely interwoven with the pattern of antiaircraft go the barrage balloons, bane of enemy dive bombers; although dive bombing rapidly is slipping out of fashion now that new methods of bombing technique have been discovered. The main virtue of barrage balloons is to keep bombers high, above effective low-level bombing range. Any diving plane whose wings contact the cable of a barrage balloon is in immediate and serious trouble. "Cows of the sky" swing over many coastal points in the United States. The barrage balloon did a good job over London during the aerial blitz in keeping German bombers high. It is doing the same in many places where American troops fight.

Locations of antiaircraft installations naturally are secret. But they may be anywhere, on any stretch of ground which offers a field of fire, behind the next hill, in the back yard, or on a tall building sufficiently braced to withstand the shock of cannon fire. Combined with the detection devices which with almost inhuman infallibility point the guns, the entire coastal rim of the United States and much of the vital interior is protected by a far flung net of antiaircraft artillery. If Hitler's dwindling Luftwaffe ever sends over a few bombing planes on what must be a suicide mission, antiaircraft

will be on the job wherever they strike, by east, west, north, or south.

Although antimechanized use of the antiaircraft guns is classed as a secondary mission, nevertheless it is one of the most important jobs of the big rifles. Guns are so mounted they can be depressed for horizontal fire against enemy mechanized units, or suddenly raised to fire against airborne targets so handy are the weapons used by antiaircraft. Nor are men who handle the guns trained only for this. They may be attacked by parachute infantry or by ground troops. They are trained to handle this phase of defense of their weapons. More than half a million of them fight on more than two score fronts, ringing vital areas of the United States and its far flung coastlines with a destructive curtain of steel. Men of antiaircraft fight on battleships, in Greenland, on the jagged Aleutians, in the swamps and rain-ridden jungles of the southwest Pacific, in Africa, the Middle East, and wherever American troops move and fight.



Spouting pellets of death at the rate of 650 a minute the .50 caliber machine gun (above) is indeed a lethal weapon. The 40mm. (right) has a capacity of 120 shots a minute. The main task of these rapid-fire guns is to be a protection for the larger pieces by shots that cut down strafing Axis airplanes.

All this amazing network of ground artillery and searchlight protection for United States forces comes under Antiaircraft Command, a training command of the Army with headquarters at Richmond, Virginia, headed by Maj. Gen. Joseph A. Green, veteran of American antiaircraft from the time when antiaircraft was a stepchild of artillery.

"Enemy planes can be assembled quickly over a given objective," says Major General Green. "Once started on their way it is frequently impossible to assemble friendly fighters in sufficient number over the enemy's objective. Ground antiaircraft must be on the spot at the time of the attack, or the enemy will cause serious damage both to personnel and to the airfield. The airplane on the ground is one of the most vulnerable of targets to enemy attack," General Green said. "If surprised before a sufficient number of fighter planes can be sent aloft, a friendly airfield provides a target composed of helpless planes, easily damaged, with the gas tanks in every grounded plane an inflammable target for incendiary bullets. Whatever the job, antiaircraft artillery is prepared to take it on and render a good account of itself."

Here is the way antiaircraft works:

High up on the rim of the stratosphere, engines idling to minimize noise, an enemy bomber flight speeds toward an American Army installation. Above them flash enemy fighter ships, guarding the slower bombers as they approach their objective—an American-held airfield.

Invisible in the dusk of a swiftly falling night, the planes speed onward. Peering eyes of the attacking force see no activity below; although their photographic "recon" has told them where to drop their eggs. No interceptor planes spring from their objective to engage in battle. All is serene and quiet—until:

Blossoms of flashing light spring from the target rim as high speed shells scream toward the high flying bombers. Far faster than sound the shells bracket the targets in brown bursts of smoke and in flying steel. These close in on the bombers, sighting shots converging. An enemy plane, struck squarely in the engines by the pattern of the shell burst, disintegrates in midair. Another loses a wing and spins off. The port engine of another black-winged bomber breaks into flame and the bomber falls off on one wing.

Swiftly marking their flight by the pin points of flame from the guns, enemy fighters dart at the friendly artillery, small bombs under the wings ready to drop at the push of a switch. Diving at speeds of 600 miles an hour they fall in flaming ruin before the blast of the automatic weapons, the 40mm. and .50 caliber quick

firing guns. A few escape the blasting antiaircraft, pull up, jettison their bombs, and whirl off over the horizon. The rest of the bomber flight veers off. The attack has fizzled because antiaircraft is on the job, as it is twenty-four hours a day everywhere American troops fight, or where American production centers turn out the tools of war.

Careful training with all detection devices and with the guns themselves produce the gunners who toss the screaming 90mm. shells plumb on the target. A practice session is like this:

Suddenly Iron Mike, the big voice of the public address system, bursts forth in noisy cacophony.

"Target approaching from left to right," the metallic voice of the speaker says. "All batteries alert. Battery commanders take over."

Down at the guns all is swift, regimented action. Rows of shiny shells are uncovered. Gun crews stand in a long line ready to pass the shells. Gunners stand at attention as gun pointers track the target, the slim muzzles of the 90's following the target like the questing nose of a hunting dog.

Shell passers or relayers, shuffle closer together. The "dancer" who passes the big shell into the gun breech rubs his hands together and braces his feet. On his speed, on his alertness depends the speed of fire of the guns. Loaders who didn't thrust their bodies out of the path of recoil of the 90 have been badly hurt when the gun, suddenly jolted backward in full recoil by the discharge, caught them in the act of turning awav Every movement of the gun crew is timed to the split second.

Far out over the sea and miles away, an almost invisible airplane droned by at 150 miles an hour, towing a twenty-foot sleeve target several thousand feet behind it.

"Report when on target," said the range officers in a dozen batteries.

"On target, sir," said the gun commanders. Far out there the target was practically invisible to the naked eye. But finely coordinated sighting apparatus found it, and the elaborate mathematical genius, the director, located its speed, height, elevation.

"Ready, C- cat- fire," droned the voice over the loud speaker.

Blam, blam went the guns. Blam, blam, blam as more batteries down the line took up the work. You waited. Seconds went by and nothing happened. You wondered if anything was going to happen up there in the sky. Suddenly below the target a brown burst of smoke etched itself against the blue. Quickly other bursts came, some on the target, others enveloping the sleeve and completely obscuring it. Cheers burst from the onlookers as two bursts of brown smoke hid the target. The gun crews didn't look up. They were busy pouring shells into the guns.

Gun crews worked like madmen; sweat poured from their backs. More bursts appeared in the sky as the sleeve target jumped perceptibly, pierced by hundreds of flying fragments of steel.

"Those targets come down literally torn to pieces by shell bursts," said a major, high in the fire control tower. It shook as the 90's poured forth their message of death to enemy airplanes. This was a quick firing demonstration. Trained gun crews, finely coordinated by months of practice, fired as many as twenty shots a minute. Normal sustained fire rate is about fifteen to eighteen a minute. This rate cannot be maintained indefinitely, but it can be kept on the target for as long a time as an enemy attack group hangs around, which won't be long under the fire of the 90's.

From far down the beach came the nearer, sharper drone of an airplane motor. Up there

Teamwork is the keynote of antiaircraft success. Here is the gun crew of a 90mm. ready to fire. Each man is in position.

in front of the control tower sharply outlined bursts of pink began criss-crossing the sky. A fast airplane, towing hundreds of feet behind it a smaller sleeve target, rocketed by, a few yards above the crested waves.

The pounding of a thousand drummers began an incisive hammering. Pink, glowing streaks came closer to the target. Those were the automatic weapons. The 40mm. Bofors, its muzzle flared to minimize fire glare, pounded out 120 shells a minute. High above the sedate, steady pounding of the 40's rose an insistent chorus. Those were the massed .50 caliber machine guns. Tracer bullets shot across and through the target. Any enemy plane that lived through that hail of steel would have to be lucky and fast. But the gunners aren't trained by the comparatively slow tow targets alone. Airplanes move much faster than a target can be towed. Four hundred miles an hour isn't too fast to picture an attack. So antiaircraft gunners use an instrument that goes about as fast as the fastest airplane. They use rockets of the Fourth of July variety but much bigger. Rockets, set off far down the beach, spun dizzily past the 40mms., and the .50's. They were cut to pieces. An airplane is much bigger and travels about the same speed. The tracers glowed pink against the rockets.

The accuracy and speed of fire of all the guns used by antiaircraft are amazing. "You don't have to get a direct hit on a plane with the 90," a sergeant explains. "The shell throws a column of fragmentation forward in a burst covering an area of about 100 by 80 feet. It travels like a column of shot from a shotgun, plenty fast."

The 90mm., the big gun of our antiaircraft, firing at night.

You can imagine what would happen to an airplane, any airplane, hit with such a column of shot.

America, of course, is not alone in its perfection of antiaircraft artillery, but it has in the 90mm. gun, and the adaptation of the 105mm., in the rifle form, two of the finest weapons ever produced for use against high flying airplanes. Adaptations of other guns also are used, but the gun crews swear by the 90's.

The 90mm. shell is a little more than three and one-half inches in diameter. In antimechanized tactics, the guns fire armor-piercing shells with devastating effect. The gun carries a crew of sixteen to twenty men, including commissioned and non-commissioned officers and enlisted men. Daily in training the gun crews go through the motions on dry runs and with live shells. They work themselves to such a high point of efficiency that for short bursts of fire some highly trained crews have poured as many as twenty-five shells a minute at the target. Each man knows the job of the others and can take over if enemy strafing planes knock out part of the crew.

Barrage balloons keep bombers high. They are doing a good job in many places where American troops fight.

But enemy strafers are not getting close to the 90's, if the 40's and the .50 caliber crews are on the job. Theirs is the job of cutting down the strafing planes to protect the 90's which reach up high into the sky. It is a constant echelon of fire power; the 90's protecting the field artillery and the automatic weapons protecting the 90's from dive bombing and low level strafing.

Every man in the six-man crew of a 40mm. gun learns all phases of the work. He learns to be gunner, azimuth operator, elevation operator, ammunition chief and so on. In less than a minute they can have the gun moving to new danger spots, so mobile is this fast shooting weapon on land.

Five men usually man the .50 caliber weapon, whose main task is driving off low level attack planes. But one man can do the job in an emergency. With this gun, too, all positions are interchangeable. The man leaning back in the shepherd's crook is a busy gent as he traverses the muzzle of the gun to follow the speedy flight of a low-level attack ship.

Antiaircraft is doing a big job in this war. The dogface in the mud and grime of the front lines looks for the fast shooting weapons to keep ground strafing planes from his territory. The airmen, shuttling from forward airfields not far from the actual battle lines, want antiaircraft around to protect the field from enemy bombing and strafing planes. Modern battleships bristle with antiaircraft. Deadly accuracy is the watchword. Speed of fire is the backerup. The combination makes American antiaircraft the world's best.

KILLING POWER

By E. BADEN POWELL

PART IV

REPORTS OF EXHAUSTIVE TESTS by Army and other experimenters reveal that certain lubricants on jacketed bullets doubled accurate barrel life. The tests indicated increased velocities by requiring less sight elevation than the same loads in the same rifles fired without lubricants. Perhaps the reason lubricated bullets are not yet commercially available in jacketed bullets is due to the fact that the barrel life with modern gilding metal bullets is relatively long in most popular calibers without it. However, the era of higher velocities has brought another problem; barrels at 4000 f.s. last but a thousand rounds and at higher velocities still less. An approach to the problem has been through attaching "lubricating wads" of wax or graphite and felt to the *base* of the bullet. This seems like locking the gate after the horse got out. Of course, there might be some lubricant left in the bore for the next bullet, but it would seem most of it would be burned out by the gases of combustion. Probably the effect is more to seal the bore and prevent some erosive gas from escaping past the short bearing surfaces of most of these tough jacketed, fast little pills.

Ordinary lubricants such as those used on cast bullets and tried by the Army and others consist of greases made from animal, vegetable or mineral oil or combinations thereof. Any of these products will squeeze out from between metal surfaces and allow seizure to take place at pressures of less than 10,000 pounds per square inch. High velocity bullets may press against the bore at pressures higher than that. Hence, the writer advocates an extreme pressure lubricant in a wax-like base that melts at 120 degrees Fahrenheit. The bullets can be dipped in this melted lubricant, which upon cooling leaves a thin, clean, hard coat over the entire surface. This lubricant is a chemical, not an oil, and prevents friction between metal surfaces by refusing to squeeze out at pressures up to 65,000 pounds per square inch. The result is similar to free-boring in that the bullet slides up the bore with less pressure. This further delays burning time, derives more velocity from the same powder charge and allows more powder to be burned to give still higher velocities.

From two and one-half to five per cent higher velocities can be achieved at the same maximum pressures by using this form of lubricant. Accuracy improves somewhat and barrel life increases substantially, depending upon the cartridge and lubricant.

In order to attain 3000 f.s. striking velocities at the longer game shooting ranges, the heavier bullets in all calibers are necessary. This is because of their greater abilities in overcoming air resistance. A combination controlled combustion chambrage, belted Magnum cartridge cases, free-boring, and extreme pressure lubricants have been the only methods so far developed achieving this at normal maximum pressures, and in standard weight hunting rifles. Velocities of the same weight bullets have been increased by more than twenty-five per cent, charges of the same powder more than thirty-three per cent, muzzle energies more than fifty per cent, distances at which the bullet retains the same killing power by more than four hundred per cent. This was all done with the same cartridge and rifle at normal maximum pressures, while the accuracy, trajectory, wind bucking ability, and loading flexibility improved substantially. (Note .300 Magnum and .300 PMVF.) (See footnote page 29 of July issue.)

The Distance, Penetration and Trajectory columns reveal that *size and weight,* at the same velocity is all important in penetration. While weight and size increase proportionately, armor and air penetration increase at a considerably higher rate. A good, long range rifle bullet, such as the .30-'06, will shoot about three miles, losing velocity all the way and return to earth at about 300 f.s. The sixteen inch cannon shell fired for maximum range at about a forty-five degree angle, at about the same muzzle velocity, loses speed down to 1400 f.s. at 30,000 yards range, then increases to 1560 f.s. when it reaches its target about twenty-two and one-half miles away.

Size, shape, weight and *construction* are very important in the killing power of a missile. The shape possessing the greatest areal dimensions during penetration for a given weight, at the same velocity, will destroy the greatest amount of living tissue. A sphere possesses these characteristics to the highest degree. It is the largest sized *practical* projectile (cross section) in any weight, when constructed of similar material. But the air offers much greater resistance to the passage of a spherical projectile at high velocity than to a projectile of cylindrical shape. And spheres cannot be shot as accurately. Therefore, the use of spheres is usually confined to small sizes, as in multiple-pellet shotgun loads, which are fired at comparatively low velocities. However, cylindrical projectiles can be constructed so as to expand upon impact at certain velocities, and destroy approximately as much tissue during penetration as a sphere of the same weight. If the weight of a missile constructed of the same material is doubled, its size (that is, of space or volume it occupies) is also about twice as much. Therefore, the *weight* and *size* of a missile are closely related to each other as well as to its killing power. *BOTH* must be taken into consideration in determining the killing power of a projectile.

This became apparent to the writer for the first time about twenty-five years ago through extensive practice. Since that time further wide experiment and study, together with his own interpretation of the recorded observations of other hunters of large experience, have corroborated the fact that while the energy of a missile varies in direct proportion to its weight, provided the velocity is the same, the killing power in *animal weight* varies as the *square* of the weight of any missile at similar velocity. In other words, in ratio to the weight of the missile multiplied by its volumetric content or *size,* unless it is intended to explode upon contact.

One of the most convincing proofs is the low killing power of *any* small dimensioned missile such as a bullet compared to that of an arrow of the *same* weight at the

same striking velocity. For instance, recognized military authorities have recorded that .30-'06 bullets fired vertically return to earth at a velocity of about 300 f.s., at which speed they bounce off soft pine wood if they strike tail first. On the other hand, .30 caliber arrows of the same weight, with blunt or "wadcutter" heads, striking at 300 f.s. will not only penetrate soft pine wood an inch or two but will shoot through and kill animals the size of a man or even a deer.

It is well established that the loads listed in the charts attending this manuscript are the correct "medicine" for the weight animals referred to at the distances given, and that lighter loads have proved to be unreliable. Therefore, by a study of the following table it must become apparent that the killing power of a projectile, expressed in animal weight, varies as its size multiplied by its weight, or more simply calculated, by the ratio of the square of its weight at the same velocity; i.e.:

TABLE III

35 grains	= 35 × 35	=	1,225 or 12 pound animals
50 grains	= 50 × 50	=	2,500 or 25 pound animals
100 grains	= 100 × 100	=	10,000 or 100 pound animals
150 grains	= 150 × 150	=	22,500 or 225 pound animals
225 grains	= 225 × 225	=	50,500 or 505 pound animals
300 grains	= 300 × 300	=	90,000 or 900 pound animals
500 grains	= 500 × 500	=	250,000 or 2,500 pound animals
900 grains	= 900 × 900	=	810,000 or 8,100 pound animals

The animal weights listed in Table III are based upon "chest shots" when projectiles of bullet density are travelling at 2000 f.s. at the time of impact. Greater or lesser animal weight is in direct ratio to the velocity, higher or lower than 2000 f.s. at the time of impact, and is dependent upon bullets constructed to expand properly at the velocity, on the particular type of animal tissue densities, as given in Tables I (see p. 34 AMERICAN RIFLEMAN for May 1943) and VI (to come).

An arrow or bullet does not "knock an animal *down*" in the manner of a speeding automobile that strikes a pedestrian, except when big game rifles are used to shoot small animals such as squirrels. A bullet when properly placed does "knock an animal *out*," by the shock. A bullet such as the .30-'06, 180 grain at 225 yards has about 2000 foot pounds of energy. If it penetrates an animal to a depth of 12 inches before it stops, it will expend its energy in about 1/1000th second, and perform work *at the RATE of* about 3600 horsepower during that brief interval of time. It actually does a *total* amount of work of only about one-seventeenth of one horsepower during that time. According to the laws governing momentum, when a 180 grain projectile at 2000 f.s. strikes a 180 pound object which is relatively at rest, it has only enough energy to impart a velocity of about one foot per second, or say one mile per hour to the heavier object. This, of course, is very small.

Bullets of the same weight as the arrows listed in the accompanying charts, travelling at 2000 f.s., possess from thirty-two to sixty-four times the foot pounds of energy possessed by the arrows. They will kill as quickly animals, when similarly shot, weighing only five to eight times as much. This is further proof that "foot pounds of energy" is not the real measure of killing power except for "hydraulic shock." Here again is where projectile *size* enters the picture in killing power. The resistance to penetration of projectiles at higher or lower velocities upon entering animal tissue also must be considered. The arrows, with only wooden shafts, due to less resistance, will penetrate at the relatively low velocities. They will make as large a wound, due to their size, as the bullets of the same caliber and weight at several times the speed and possessing many times the foot pounds of energy. However, the arrows do not produce appreciable "hydraulic shock effect."

It is evident from a *practical* viewpoint, that the range at which any weight of projectile will kill the *same* weight of animal, is increased by an increase in muzzle velocity. Increasing the muzzle velocity of a bullet proportionately increases its *practical* game shooting accuracy when fired from good modern rifles, due to flatter trajectory, quicker time of flight, usually less wind effect, etc. This enables the same user to hit the same sized animal at the greater distances at which the bullet has the same remaining velocity. This is just what the average hunter would attempt to do, believing he had a longer range load.

TABLE IV

Bullet	*Grs. Wt.*	*M. V.*	*Vel. 100 yards*	*200 yards*	*300 yards*
.22 Hornet	46	2650 f.s.	2090*		
.219 Zipper	46	3390		2140*	
.220 Swift	46	4140			1810*
.25–35 W. C. F.	117	2280	1970*		
.257 Roberts	117	2630		2050*	
.30–30 Peters Belted	180	2120*			
.30–40 " "	180	2380	2080*		
.30–06 " "	180	2720		2110*	
.300 Magnum H. Pt.	180	3060			2200*

By comparing the figures starred in the right-hand column in Table IV, it will be seen that this Swift factory bullet retains about the same velocity at 250 yards as the .22 Hornet retains at 100 yards. What the .30-30 will kill at 100 yards, due to bullet weight and velocity, the .30-40 will kill at 200 yards, the .30-'06 at 300 yards, and the .300 Magnum at 400 yards. This bears out the writer's contention that for *practical* hunting purposes the size and weight of a bullet determines the maximum weight of animal the bullet can be expected to kill humanely. However, if the hunter is taught that by boosting a "woodchuck" bullet, such as the Hornet, up to Swift velocities, he thereby has a "horse-killing" load he will learn from experience. After wounding and losing to the wolves most of such large-sized animals, two very distinct and different lessons appear, the first being that even a poor shot has no trouble in hitting a large deer or elk at 300 or 400 yards with the Swift class of cartridge, due to its superb accuracy. The second lesson is that he still has *only* a woodchuck shooting iron, and for an animal of this size it is ample at 300 to 400 yards, from a standpoint of both accuracy and killing power but for nothing more.

(To Be Continued)

(In his next article of this series Mr. Powell continues his discussion of the effect of bullets of varying weights at different distances. The material is tabulated. There are clear explanations of the tables.)

BRIDGEPORT, CONN., AUG. 1943

Rifle Remingto

Possibles and Impossibles

by FRANK J. KAHRS

Some years ago I wrote an article about getting your correct center of impact in target shooting and called it "Why Riflemen Go Wrong." It was inspired by my reactions after looking over many thousands of targets at shooting tournaments around the country.

Believe it or not, I'd find many fine groups—in the wrong place—and all because the shooter wouldn't have the nerve to move his sights. But, giving him credit for having brains enough to move the group up into the 10 ring, I decided, nevertheless, to try to educate him not to leave his group off to one side of the 10 ring, so I fixed up an elaborate display of diagrams, examples to prove my case, and then gave quite a lecture to support my argument.

The story was read with a great deal of interest and, I believe, in most cases, was accepted as something worthwhile, and much improvement in the shooters' scores resulted—I hope. There were a few unbelievers who took exception to my theories, but they merely proved the rule. It is not my purpose to go into detail here and tell the story all over again, because there isn't room enough in the column, but in a few words I can say enough to suggest to all small and big bore target shooters that unless the center of impact at a given range is correct, they will never make high scores.

How to get that center of impact? Very simple, indeed. Just fire three shots, three sighting shots, without changing your sights or hold and then triangulate those three shots. Then select the center of that triangle which gives you your point of impact. All you have to do then is to measure the distance from that center to the center of the 10 ring, both horizontally and vertically, and in you go, and stay—I hope!

Now, the advantage of knowing your true center of impact is valuable also when firing in wind, especially one that is strong enough to blow the .22 Long Rifle bullets from East to West, or North to South and vice versa, but we'll talk about this perhaps in the next column.

* * *

Never let it be said that the boys out in Western Pennsylvania are not doing their stuff these days in rifle training. Out in that mountainous country, they have a couple of rifle clubs and one of my correspondents tells me that there are over 500 members who are taking the Army "E" qualification course for .22 rifles. This includes, you know, slow and rapid fire and with iron sights. None of the belly stuff and telescope sights slow fire for these boys at this time. It's the practical stuff for business use in the war effort that they are after.

There's a lot of other shooting activity along regular lines in Pennsylvania, too. Quite a few matches are scheduled to be held this summer.

THIS IS IMPORTANT: KEEP UP THOSE DUES!

It's only natural that some rifle clubs and state associations are having a rather hard time these days paying current expenses and keeping out of debt.

One reason, of course, is that many members formerly helping support them are now in the armed forces. Another reason is that many members, doing full-time war work, find little time for shooting, and are letting their dues lag.

However, most clubs and associations—probably yours among them—have certain fixed expenses which must be met regardless of how many people are actually shooting. Taxes on owned real estate. Or rent. In addition, every club has a certain amount invested in range equipment. Because of lack of dues to meet these expenses, some clubs are faced with losing their clubs, range equipment—everything!

We don't know what the situation is in your club but we do urge you—whatever it is—to *keep paying dues promptly*—even if you are doing little or no shooting.

In that way you will be helping keep your club going. And keeping your club going now will assure you an already-existing place to shoot with congenial people when the war is won and conditions are normal again.

Remington Arms Company, Inc., Bridgeport,

THERE'S ONE IN EVERY CLUB . . . On

Remington News

A PAPER FOR PEOPLE WHO SHOOT

Let's hope it's soon, soldier!

SOLDIER (*dreaming*): Boy, oh boy, what a morning! Just the right bite in the air to make those birds fidgety. Just the right amount of overcast and wind. And millions of ducks! Lookit that bunch coming in to give our decoys the once-over. Here goes for that big drake in the lead. Bang . . . ouch! What a kick this gun has! . . . **Okay, sarge, go easy, will ya . . . I'm awake!**

LET'S HOPE it's soon again, soldier, that you'll be back in your favorite duck blind . . . for that represents one of the American rights we're all fighting for.

We're fighting not only for the Four Freedoms . . . but for freedom to go hunting or fishing or whatever we do for recreation . . . in peace, unregimented, and with no one to say *verboten.*

This is an American institution as old and as cherished as America itself.

Here at Remington we are doing everything in our power to speed the day of a victorious peace . . .

— *during 1942, Remington produced enough small arms ammunition to fire 300 times at every Axis soldier.*

— *during the last 7½ months of that year alone, Remington produced more small arms ammunition than the entire country produced during all four years of World War I.*

— *thousands upon thousands of military rifles were speeded to our armed forces all over the world.*

— *and Remington has received four Army-Navy "E" Awards*

The many thousands of us who are Remington are grateful that we are able to serve our country. And after the war is won, we will be glad to serve our sportsmen friends again with Remington's distinguished line of sporting rifles and shotguns, and such famous ammunition as Nitro Express shells, Kleanbore Hi-Speed .22's, and Core-Lokt big game bullets. *Remington Arms Company, Inc., Bridgeport, Conn.*

"Nitro Express," "Kleanbore," "Hi-Speed" Reg. U. S. Pat. Off.; "Core-Lokt" a trademark of Remington Arms Co., Inc.

Remington

DU PONT

The Home Workshop

Shoot .410's in Your Big Guns

By CLYDE BAKER *

PRESENT CONDITIONS are already making it difficult or impossible to obtain shotgun shells, particularly in the larger bores; so the possibility of using the friendly and less costly 410's in your favorite gun presents an attractive angle. Moreover, the lighter load with its reduced noise and recoil is ideal for the early training of the lady of the family, or the small boy, in handling the shotgun.

Though having less power and range due to the smaller amount of shot than its larger brothers, the little 410 has a definite use in the hands of hunters—for birds in close cover and bunnies along the hedge rows where all shooting is fast and at short range. So we adopt a kink well known to English shooters and use a "sub-chamber" in the larger gun.

This is a cylinder six inches long, accurately chambered to fit the 410 gauge shell, and turned and finished on the outside to a smooth easy fit in the shotgun chamber. Needless to say, it is adapted only to single and double barrel guns and not to the pump or auto-loader. It may be made either of cold rolled steel, brass, bearing bronze or a fairly hard aluminum alloy, the latter being preferred because of light weight.

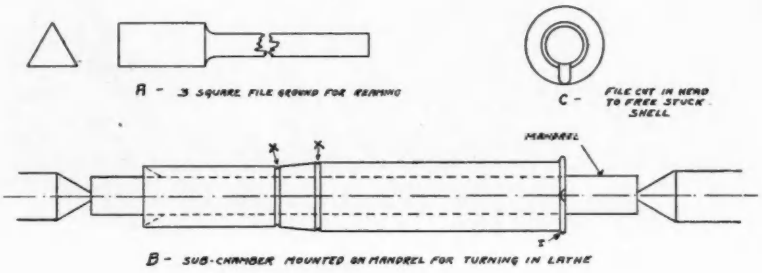

A - 3 SQUARE FILE GROUND FOR REAMING
C - FILE CUT IN HERE TO FREE STUCK SHELL
MANDREL
B - SUB-CHAMBER MOUNTED ON MANDREL FOR TURNING IN LATHE

FIG. 1

No dimensions are given as the sub-chamber should be made to fit the individual gun, and different guns and different makes will all vary slightly in chamber dimensions and shape of cone. The first step is to make a sulphur cast of the last seven inches at breech of barrel. Insert a slender wire through a cork of the right size and push this into the barrel. The cork should be just a smooth, easy push-fit.

Hold the projecting wire centrally and after warming the barrel by playing a torch flame over it lightly, pour in the sulphur mixture until the barrel and chamber above the cork is completely filled. The mixture used is:

Flowers of sulphur	6 ounces
Powdered lampblack	10 grains
Spr. of Camphor	9 drops

Melt the sulphur carefully in an iron ladle, add the lampblack, and stir. Then add the camphor just before using. Pour with a steady motion so as to fill the barrel at one pouring. Let cool for thirty minutes (until barrel is quite cool), then insert a wooden rod from muzzle, and tap lightly while pulling carefully on projecting wire until the cast is removed intact. It may contain a few air holes which won't matter; it will give you the exact size and shape of the chamber and rear of bore with little or no shrinkage. Make this cast carefully at all points and transfer the dimensions to a rough sketch for later use.

Obtain a piece of round stock of any one of the materials mentioned, about six and one-half inches long and at least one inch in diameter. Center punch both ends accurately, center it in lathe chuck, and drill a ¼ inch hole clear through from end to end. Leave the work in the chuck from here on and do all subsequent work from one end.

"Mike" a few of your favorite kind of 410 gauge shells and add .002 inch to the average of the shells measured. This is the diameter to finish bore your sub-chamber. Continue drilling with slightly larger drills until you approach within about .025 inch of final diameter, then finish with a straight machine reamer ground to suitable size. If none is available, a boring tool may be made from an old 3-square file as shown at (a) Fig. 1. Anneal the file thoroughly, grind to shape as shown to form a long shank, grind off the teeth evenly on all sides, leaving the cutting edges about one inch long and well relieved at the end. Harden only the cutting end at cherry red by dipping in oil. Polish and draw to a light brown color and quench in water. Make the tool slightly larger than wanted before hardening and tempering; then grind it to size lightly, testing it by reaming a hole in a piece of scrape stock held in the lathe chuck (this, of course, before the working stock has been set up). When within a thousandth or two of size, finish to exact size by honing on an oil stone.

This tool may be held in tailstock chuck, or mounted in tool post of lathe as preferred. Reaming is done at the very slowest back-geared speed and with a very light feed to prevent chattering. When done properly, a very smooth finish will result. All reaming, as well as drilling, should be done with plenty of cutting compound. The best for this purpose is about two parts pure lard mixed with one part cutting oil. Finish by polishing carefully with abrasive cloth set in split dowell rod, pushing it in and out with work turning very slowly and finally with the work standing still. A final finish with very fine

* Published Posthumously.

emery cloth well oiled, used in draw-polishing, is desirable. The shell should just drop in and out of the bore freely without noticeable play.

With a pointed cutter bit, the rim cut should now be made in the end and the work faced off so that with the shell seated, its end is exactly flush with the end of the sub-chamber.

Now, remove the work from the chuck and turn up an 8-inch mandrel from scrap stock, giving it about .001 inch taper through its entire length. Then mount the work between centers on the mandrel as shown in (b) Fig. 1, and turn it carefully to size and shape to correspond exactly with measurements of your sulphur cast previously taken. The "cone", x—x, (b) Fig. 1 corresponds to the cone in the barrel's chamber, and should have its two angles fully relieved by canellures as shown at x—x. Turn the rim (r), (b) Fig. 1, so that it will chamber exactly flush with the face of the breech end of the barrel. Finish by light filing in the lathe and polishing with fine abrasive cloth. The work may then be removed from the lathe dog and tried in the barrel as required during the finishing process. It should push in easily but fit closely enough not to fall out when the barrel is inverted, as the extractor on the gun will withdraw it readily for reloading.

If the bore of this sub-chamber has been sized correctly, the empty shell will usually drop out. However, a small cut should be filed as shown at (c) Fig. 1 to aid in working out a stuck shell.

Note that there is no "cone" in the bore of the sub-chamber. This is a straight hole through its entire length, funneled out by reaming at its front end. It is not expected that this provides a "bore" for distribution of the shot charge. The idea is to permit the charge to spread to the diameter of the gun barrel itself, and let this barrel and its choke take care of the pattern. This it does remarkably well. Naturally, the smaller shot charge means a more open pattern, which in turn means that game must be shot at shorter ranges. But the sub-chamber is remarkably effective up to fifteen or twenty yards and often further.

Two of these sub-chambers should be made for use in a double gun and, of course, if one is ambitious several extras may be made and carried already loaded in the pocket. Guns having automatic ejectors require some care lest they kick the sub-chamber into the grass to be lost. Even this is unlikely, due to the greater weight of the sub-chamber. With a little practice one learns to catch the sub-chambers in the hand as the gun is opened.

Random Shop Notes

WHEN FINISHING UP A GUNSTOCK which proves to have frequent soft streaks in the grain, here is a kink that will help. Walnut of this type is particularly annoying where a checkering job is to be done. Such wood checkers about as easily as a dry sponge, and unless the wood is specially treated the checkering will have a fuzzy appearance of which you can never be proud.

If this occurs, it will first be noticeable when you start spacing out the lines. With the spacer lay out the entire design in both directions. BUT, before using the V-cutter or float, spray the design with artist's "Fixatif" using a common throat atomizer or the artist's simple blowpipe.

If Fixatif is not at hand, make your own by dissolving about a rounded tablespoonful of dry flake shellac in a pint of denatured alcohol. This could also be painted on with a brush, but the atomizer or blowpipe is better as it drives in the Fixatif. The mixture should be water-thin to assure deep penetration in the wood through the spacer cuts. Apply several times, allowing each application to dry five minutes or so. Further applications may be indicated as the design is cut deeper. This very thin shellac solution penetrates deeply, hardens, and binds the loose spongy fibres into a firmer mass that can be cut and finished in a manner comparable to the soundest wood. No harm is done if some of the Fixatif gets on the smooth wood around the checkering, provided the wood has been oiled previously. If desired, surrounding areas may be masked off by means of Scotch tape or with frisket paper coated with rubber cement.

Speaking of shellac suggests another kink, particularly helpful to the advanced gunmaker who goes in for a bit of real machine work, such as special scope mounts and the like. The usual method of laying out work for drilling, shaping, and other operations is to coat the steel with a solution of copper sulphate. On drying, this leaves a light plating of copper on which scribed lines show up more or less clearly. A better way is to take ordinary shellac, mixed to about average free-flowing consistency, then cut it thinner by adding denatured alcohol from one third to one half by volume. Color this black with alcohol-soluble Nigrosene (sold by paint stores). About a spoonful to the pint is usually sufficient. With a bit of cloth a very light coating of this thin black shellac may be spread over the work. It dries almost instantly. The finest lines scratched on it with a sharp scriber are accurately visible even in poor light. This method, too, is much easier on the eyes than the copper-sulphate layout which is often hard to see by artificial light.

Checkering Bolt Knobs is a pain in the neck to most gunsmiths. However, instead of suffering or dodging the order, try this easier way.

First, make a special checkering tool from a piece of one-sixth inch thick, flat drill rod or from similar material. Note that the edge is slightly concave from heel to point. Cutting the channel is a mean filing job,

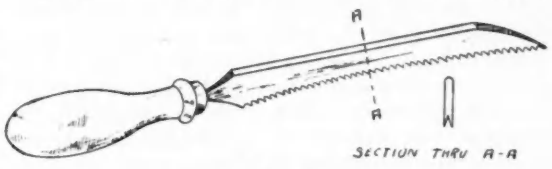


Fig. 1. Bolt Checkering Tool

but is really worth the trouble. Bolt knob checkering should run not less than twenty-four lines per inch, so be guided accordingly when making your spacer. Harden

the tool in water at a bright cherry red, polish it, then lay it flat on a piece of red-hot iron, and quench in oil at the faintest sign of light straw color. Dipping it into melted lead is also a good way to draw the temper evenly. It takes only a few seconds, so don't overdo it.

Next, make a marker from a piece of ordinary tubing. The diameter should be somewhat less than that of the bolt knob. File in fine teeth around the cutting edge and harden the edge in cyanide. Set it on the bolt knob, then press down hard and give a turn or two. A true circle will be clearly marked. File this to the required depth with a three-square diesinker's needle file to form your working border.

Start cutting the lines with your spacer from the middle of the circle toward each side, and in a direction convenient for missing the bolt handle with hand or tool. Lay out all lines in one direction, then coat with the black shellac mixture, and lay them out in the other direction. Keep all lines in each set parallel, like the parallels of latitude on a globe, NOT like the meridians of longitude which run together at the poles. Finish to sharp diamonds with the three-square file, working carefully up against the border circle. Go over this circle again with a file after the lines are finished. A good job of this kind will take about two hours. An easier job may be done in half the time with a stippling punch.

Fig. 11. Circular marker, above; stippling punch, below

Shotguns *and* Spherical Missiles

By NORMAN POWELL

THE QUESTION HAS BEEN RAISED as to whether the rotation of spinning of spherical projectiles like cast lead balls, by means of spiral grooving called rifling, has any effect on the projectile's path of flight. If so, does this rotation of spherical missiles improve practical accuracy over similar missiles fired from smooth bore guns?

The answer is yes. Such spherical missiles as lead balls fired from rifled barrels are always more accurate than if fired from smooth bore barrels. The curious effect that rotation or spinning has on the path of flight and point of impact of spherical projectiles is not too well known. The average shooter who considers it only necessary to rotate elongated bullets to prevent them from tumbling end over end may consider it unnecessary to rotate a ball.

The speed and direction of rotation does, however, have a marked effect on the path of flight. Golfers and tennis players know this well. Newton wrote on it in 1666.

In the case of a round ball that is a free or loose fit in the barrel being fired from a smooth bore gun, the direction and speed of rotation will be a random affair and will vary from shot to shot. This causes variation in the point of impact. It causes poor accuracy.

Were it possible to stop all rotation of a ball as it left the muzzle of the gun without destroying its spherical shape, we could expect constant point of impact and good accuracy from balls fired from smooth bore guns, provided, of course, the ball was a good fit in the barrel. We can stop this random rotation by having the ball fit tight in the choke of the gun. This, of course, destroys the spherical shape of the ball and we can expect it to tumble end over end in part of its flight. Thus we have removed one cause of inaccuracy and introduced another. In actual practice, balls that were .014 inch larger than the smooth bore choke tube used on a 12 gauge gun made 7 inch groups at 50 yards. Under like conditions, balls made 4¾ inch groups at 50 yards when fired offhand from a peep-sighted 16 gauge shotgun. The balls in both cases were a little over 1/100 inch larger than the choke. This accuracy just about equals average rifled slug accuracy, and proves that when the balls are just the right fit in the choke little tumbling occurs up to 50 yards.

As was to be expected, when a constant direction and speed of rotation was impacted to balls in a shotgun with a rifled choke tube, the accuracy was very much improved over any round ball, smooth bore accuracy I have ever heard of or seen.

Normal 12 gauge ball and rifled choke tube accuracy is about 3 inches at 50 yards, 10 to 12 inches at 100 yards. Under the same conditions, 16 gauge made 2½ inch groups at 50 and 7 inches at 100 yards, probably due to the greater recoil of the 12 gauge. Bear in mind that shotguns with heavy ball loads especially when fired from a rest have an abnormal recoil effect. Machine rest test could be expected to reduce the normal spread. As in the case of balls fired from tight smooth bore choke tubes, balls fired from rifled choke tubes were also deformed. This in 16 gauge was very slight, but 12 gauge balls had their length made less than their diameter by the gas pressure building up behind them as they were forced through the rifled tube. The reader will bear in mind that round balls in muzzle loading rifles were deformed by being pushed down the barrel with a ram rod.

After many experiments and tests, I believe that the following rules will apply to round balls fired from small arms:

Rule 1. Balls that do not have the same speed and direction of rotation from shot to shot will give poor practical accuracy.

Rule 2. Any ball leaving the muzzle of a gun without any rotation can be expected to give practical accuracy, provided the ball is a good barrel fit.

Rule 3. There is no practical way of preventing random rotation without deforming the ball.

Rule 4. If Rule three is true and that balls will be deformed, we are no longer dealing with a true sphere and must rotate the missile by means of rifling to prevent tumbling or key holing.

The result of my experiments convinces me that the

(*Continued on page* 39)

Simplified Small Arms Ballistics

FOR THE SPORTSMAN AND SOLDIER

By the OLD COACH

Since its inception, the Old Coach's Corner has been given over to a review of shooting subjects for old and new shooters alike. One of the most important subjects is that of ballistics, an understanding of which, we must admit, is too often taken for granted. To provide the necessary background and to establish basic principles and fundamentals, the Old Coach undertakes this series; presented in simple terms, yet invaluable in review for all RIFLEMAN *readers.*

(*Continued from July issue*)

The measuring of headspace is a very important operation requiring expensive, hard-to-get tools. It is a task to be entrusted only to skilled mechanics and should not be undertaken by the average shooter.

So many variables can occur as a result of plus and minus tolerances in manufacturing and assembling the barrel, bolt, and receiver that it is not practical to assemble *any* barrel or bolt into *any* receiver with the assurance that correct headspace will result. For this reason, no manufacturer will sell a barrel to an individual to be assembled by merely screwing it into the action. The manufacturer insists that the action and barrel be properly assembled at the factory. There the barrel is manufactured with the chamber not completely cut for depth. It is then assembled and screwed to the breech action. A finishing chamber reamer is then used to cut the chamber to just the correct depth by constant checking with the headspace gauge.

A caution must be introduced here. As rifles are headspaced with reference to breech block, receiver, and barrel—all three—it follows that changing the breech block or bolt may dangerously alter the headspace. Bolts, particularly in military rifles, can readily be changed from one rifle to another, and the bolts will *apparently* fit all right, but the change in headspace may be disastrous. Never swap bolts without proper checking with a headspace gauge. In recent years, the best American rifles have had their bolts numbered with the same number as the rifle, thus indicating that they will fit together with proper headspace.

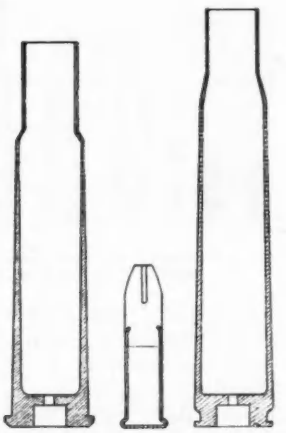
With the increase of our knowledge of the metallurgy of steel, there has been a steady improvement in the characteristics of the steel used in rifle barrels. In black powder days when breech pressures never exceeded 25,000 pounds per square inch, a comparatively soft, simple carbon steel was almost invariably used for rifle barrels, and is still generally used for barrels intended for caliber .22 rim-fire cartridges, because it can be cheaply and smoothly machined and answers all requirements perfectly. But such steel will not suffice for high-pressure cartridges nor for the frictional wear of metal-jacketed bullets. It is neither safe nor satisfactory to rechamber a caliber .22 rim-fire barrel for a high power cartridge.

Great advances have also been made in the heat treating of receivers. Consequently the amateur gunsmith should never try to convert an old gun, built for low pressure loads, into a modern high-velocity weapon. Receivers on old and new guns may *look* alike but they may not *act* alike when a high pressure cartridge is fired!

III. WHAT'S IN A NAME?

ABOUT THE FIRST THING the amateur student of ballistics has to learn is the fact that too much dependence cannot be placed in a name. A "ball cartridge" is *not* loaded with a ball! The ".30 Army" and ".45 Army" are *not* the present day Army rifle and pistol cartridges! "Caliber" *may* mean the diameter of the bullet but it *can* be a measure of length in proportion to the diameter of the bullet or bore. It will be wise to answer some of the more common questions—(and correct some of the more common errors!)—before we become more deeply involved in technical discussions.

First, we will look into the much-confused system (?) used to designate "calibers," "gauges" and "bores." The British are "one up" on us at this point. They designate all guns—shotguns *and* rifles—by the "bore." Their Service rifle is ".303 bore," their shotguns are "12-bore," "16 bore" etc. In America we use the term "caliber" to indicate the bore diameter of rifled small arms and the term "gauge" to indicate the bore diameter of shotguns.



Rimmed .30-40 case—left. .22 rim-fire—center. .30-'06 rimless—right

Shotgun "Gauges": Because the terms "12-gauge," "16-gauge," etc., have no relation to any commonly used system of measurement, newcomers to the shooting game always ask the question, "What does '12-gauge' really mean?" The term has come down to us from the earliest days of small arms manufacture, when shooters melted lead and cast their own round-ball bullets. A "12-gauge" gun was a gun having a bore diameter of the right size to permit the proper loading and firing of lead balls weighing twelve to the pound. If you wanted a gun to handle round lead bullets of a size which would cast sixteen bullets from each pound of lead you ordered a "16-gauge" gun. Obviously such a system allowed considerable leeway in actual bore diameters. Nowadays standardization has been achieved as to chamber dimensions but there is still a certain amount of individuality shown by manufacturers in the design and dimensions of the "cone" which guides the shot from chamber to barrel and in the "choke" at the muzzle which reduces the spread of the shot and pro-

duces an even pattern. The action of the "cone" and "choke" will be discussed in a later article. For the purposes of this article it is sufficient to point out that it is not always possible to tell whether a shotgun is "full choke" merely by measuring the bore diameter at the muzzle in comparison with another "full choke" gun. Different manufacturers have different ideas as to the best method of arriving at a proper "full choke" effect and the bore measurements are not standardized.

It is also important to know that in shotguns, as in rifles, the "gauge" is not the only factor determining the ballistics of the gun. Guns of the same gauge are manufactured with *chambers* of different lengths. Shotgun shells of the *same gauge* are similarly made in *different lengths*. A blown-up gun may result from attempting to fire a 12-gauge 3-inch shell in a 12-gauge gun having a 2¾ inch chamber.

The .410 Shotgun: This is the only shotgun designated by the bore diameter *in inches*. The bore of this gun measures approximately .410″. It is *not* bored to handle lead balls of a diameter which would weigh 410 to the pound. To further abet the general confusion this gun is also now manufactured with "standard" and with "long" chambers and two lengths of shell are available.

.22 Rim-Fire Cartridges: There is one very common error made with reference to the designation of the ordinary .22 rim-fire cartridges. Many people fail to appreciate the enormous difference between the ".22 long" and the ".22 long rifle." These are two distinct cartridges and must not be confused! The .22 Short is the oldest of the .22 rim-fire family. It is ballistically a well-balanced cartridge of low power, quite accurate at ranges up of fifty feet and, in rifles chambered and rifled exclusively for the "short" cartridge, gives good accuracy up to fifty yards.

L. to R.: .22 short, long and long rifle, .30-30, .30-40, .30-'06, .300 H & H Magnum, .45-70, .50-70 inside primer, .45 Colt, .45 ACP

In the effort to obtain more "punch" and more accuracy at fifty yards and longer ranges the "short" cartridge case was lengthened, years ago, to provide more powder capacity and the regular "short" bullet was loaded into the longer case. The result was a ballistically *unbalanced* combination. Even at fifty feet the ".22 long" lacks the accuracy of the ".22 short" and at the longer ranges the accuracy becomes progressively worse. The ".22 long" serves no useful purpose. Why the manufacture of ".22 longs" is continued is one of the minor mysteries of the ammunition business. Don't waste *your* money on "longs." Insist on "long rifles."

The ".22 long rifle" was the final result of experiments made to improve the ".22 long." The "long rifle" has the same length case as the "long" but it carries a heavier bullet which gives proper ballistic balance to the cartridge. The .22 long rifle is one of the world's most accurate cartridges at all ranges up to 100 yards. Except in strong, blustery or shifting winds, it will outshoot many high-powered center-fire cartridges, some of them at ranges up to 200 yards.

Never confuse the ".22 long" with the ".22 long rifle." The first is an outstanding example of the poor results that come from bad ballistic balance. The latter is one of the best examples of the excellent results to be obtained from proper ballistic balance.

Center Fire Cartridges: In muzzle-loading days the caliber of a rifle was of no great importance. Each rifleman cast his own bullets in moulds made by the rifle manufacturer so that bore and bullet would be properly mated. As barrels were worn or damaged they were re-grooved and the bullet mould was properly enlarged at the same time. In order for two or more riflemen to compare notes as to interchangeability of their ammunition or moulds the only dimension needed was the bore diameter of their respective guns. This was expressed in the English measure of hundredths of an inch and was called the "caliber" of the rifle. Thus a "caliber .56" rifle was one in which the bore measured 56/100 of an inch.

Later, with the advent of breechloaders and fixed ammunition, the shooter needed more information in order to buy cartridges which were safe to use in his gun and which would give him the desired results on game. The first question was: "What is the load?" Was it sixty grains of powder? Seventy grains? Ninety grains? All powder was black and of about the same granulation and composition. Seventy grains of powder required a cartridge case of the same *cubic* capacity regardless of who made the powder. All cartridge cases were straight or only slightly tapered. There were no bottle-necked cases. The caliber of the bullet indicated the *diameter* of the case with few exceptions. The *weight* of powder charge therefor furnished a convenient, easily understood measure for the length of the cartridge case. Only one thing more was needed to indicate the over-all length of the cartridge and its capabilities as a game-killer. That was the weight of the bullet. From such simple, highly practical considerations developed the system of designating black powder, breech-loading cartridges as ".45-70-500"—(caliber-powder charge—bullet weight). So long as black powder remained the propelling charge it was a very satisfactory, very simple and very clear method of cartridge designation.

With the arrival of smokeless powder the brief period of easy-to-understand cartridge designation began to disappear. At first the smokeless powders were manufactured to occupy the same cubic space as the required charge of black powder. This allowed the continued use of the old hand powder-chargers made out of empty cartridge cases. This was known as "loading by bulk" instead of "loading by weight" (the smokeless *weighed* less than the black powder though it occupied as much *space* in the shell). These smokeless powders were known as "bulk" smokeless brands. But smokeless powders *could* do more work and take up less space. Obviously such "bulk load-

ing" wasted the space saving possibilities of smokeless powder.

New cartridges were soon developed to handle the more powerful, concentrated, hard-grained "dense" smokeless powders. The "dense" powders could be so controlled in manufacture that different combinations of bullet and powder could be loaded in a single type of cartridge case in order to obtain widely varying results on game or targets. The old ".45-70-500" system became meaningless.

A few of the cartridges that became popular during the transition period were given the then familiar caliber-powder-bullet designation (.30/30, .25/20, etc.) and they are still sold under these designations. The bullet weight no longer appears in the name of the cartridge because a variety of bullets loaded to different velocities are now available. The second figure, which formerly indicated the powder charge, and thereby furnished a guide to velocity and killing power, is now quite meaningless except as a catalogue designation.

Since the ballisticians turned entirely to the development of cartridges designed for modern dense smokeless powders, the designation applied to the cartridge by the manufacturer has meant little with regard to the size of a cartridge case, the weight of the bullet or the game-getting qualities of the load.

The first of this "high intensity" generation in America was probably the ".22 Hi-power." It was an attractive name and served to distinguish the cartridge from the various older .22's, but it told nothing as to bullet weight, velocity or killing power. Other more modern cartridges in this "attractive name" group are the ".218 Bee," ".22 Hornet," ".22 Zipper," ".22 Varminter," ".220 Swift," etc.

Some manufacturers have indicated high velocity cartridges by including a velocity figure in the cartridge designation. Examples are the ".250-3000" Savage and the ".22-3000" Lovell. The cartridge designations do not show the bullet weight with which the indicated velocities are obtained. A change in powder, bullet weight, or bullet design may completely change the velocity and game-getting qualities of these cartridges.

It is noticeable that the *caliber* of these modern cartridges is designated both in hundredths of an inch (.22 Hi-Power, .22-3000 Lovell) and in thousandths of an inch (.250-3000 Savage, .220 Swift.) There is no particular reason for such differences in caliber designation. It is merely a matter of trying to find a designation that will "register" with the shooters. *All* modern rifles are actually worked to bore dimensions measured in ten-thousandths so don't be elated, or alarmed, if a cartridge shows up some day designated as the ".2193 Super-dropper."

Military Small Arms are designated by an official title which includes the caliber in inches or millimeters and the year of official adoption or a model number. In addition, military small arms almost invariably acquire an unofficial designation based on the name of the inventor or the arsenal where the gun was developed. Thus we have the "U. S. Rifle, caliber .30 Model 1903" (chambered for Model 1906 ammunition) which is universally known as "the .30/06 Springfield." We also have "the U. S. Rifle, caliber .30 Model 1917" (also chambered for the Model 1906 cartridge) which is universally called "the .30/06 Enfield" or "the 1917 Enfield."

In recent years our military people have adopted the British system of designating small arms by a *model* number rather than by the year of adoption. This permits proper designation of arms and cartridges which have been modified but retain their basic characteristics. The British indicate the model by using the term "Mark I," "Mark II," etc. In America we use only the letter "M" which may be interpreted as standing for the word "model" or the word "mark." It doesn't really matter but many inches of newspaper and magazine space have been taken up by discussion of the subject!

(*To be Continued.*)

Shotguns and Spherical Missiles

(*Continued from page* 36)

accuracy of spherical missiles fired from shotguns that have rifled chokes can be greatly improved. I used factory loaded shells that are supposed to have a variation of the powder charge of eight per cent and I found the balls I cast have a variation in weight up to four grains. This causes unnecessary vertical dispersion.

Due to the fact that round ball molds are made and sold, these balls are easy to cast and load into standard factory loaded shot shells after the shot is removed. They are well worth consideration for a practical big game or defense load. This powerful load should be used only in guns in good condition designed for heavy loads and balls that are more than $\frac{1}{100}$ inch larger than the choke should not be used.

In no case should the ball be a tight fit in the barrel before it reaches the choke. The balls I use are at least $\frac{1}{100}$ inch smaller than the standard barrel diameter. No single missile that is to be used in a shotgun should weigh more than the shot charge the gun is designed for. Nor should any single missile be harder than lead or seated hard on the filler wad.

After considerable experimenting, I am convinced that it is a mistake to taper the barrel of a shotgun from the start of the choke to the muzzle. The wall thickness at this point should be at least twice as thick as a standard barrel. This will improve shot pattern and make for better accuracy with single missiles and be safer. It is becoming a rather well known fact that muzzle devices like Cutts, Weaver and Poly-Choke on account of catching the eye quickly improve the aiming qualities of a gun.

This being the case, it is a question worth considering that the shooting quality of single barrel and repeating shotguns may be improved by truing up the muzzle of the barrel in a lathe and forcing a tight fitting sleeve thereon. A barrel thus reinforced would stand a lot of abuse as to loads and alterations to the choke.

There is no question in my mind but that the accuracy of single missiles fired from shotguns is going to be greatly improved after this war is over. Incidentally, I have had considerable correspondence with Karl M. Foster, designer of the rifled slug, and he, too, can see room for great improvement.

POWDER SMOKE: READERS COMMENTS THE NEWS DESK

RE-LOADS . . .

JUNIOR KNOWS HIS AMMO

Millerton, New York.

Editor:

When reading the July RIFLEMAN, I came upon a slight error. It was in the Old Coach article, "Simplified Small Arms Ballistics." He said, "All rimfire cases are 'straight cases', but center-fire cases are in all three types" etc. He evidently forgot the old military cartridge, the .41 Swiss rimfire which has a bottleneck case.

Dudley B. Hartung,
NRA Junior Member.

BUCK ROGERS' 10X

Glen Ellyn, Illinois.

Editor:

Glad you like the smokepole cartoons (appearing p. 20 of this issue). The rifle shooting game lends itself perfectly to such stuff.

I am still being kidded about the registered match at Deerfield Rifle Club last fall. I was shooting scope at a hundred yards and thought my eyes were going bad. The target looked fuzzy. By great good luck I shot a ten-X possible—my one and only—and then discovered that I had left the iron sight on the business end of the old cannon. The fellows claim I should nail a big board up in front of my eyes and I'd shoot possible every time.

Dick Calkins.

But Dick Calkin's 10-X incident scarsely matches his "Buck Rogers" comic-strip feature he draws so well.—ED.

NEWS EDITOR REPORTING

Editor:

Your former associate is reporting, suh, from what they call basic.

We had our first marksmanship lesson yesterday—a once-over lightly on triangulation. I learned a few things, though, that you didn't tell me. I overheard some of the boys talking about the Enfields we are using. They decided the Enfields were good because they had no windage. Anyway, Kentucky windage or holding over, is far superior to any mechanical method. Also, the Enfield is as accurate at 1600 yards as at 100. We should remember not to use British .303 in our rifles although we can use our .30-30's in British rifles and machine guns.

If I ever get the time and a typewriter I have some pretty good human interest stuff, but I guess that'll have to wait until after basic.

Pvt. Ray Stan.

(Pvt. Stan's dry humor is cropping out again, even in the midst of K. P. His short news article, "The Revival of Squat," p. 40, May issue, was a classic in brevity; his "Poor Mrs. Hrydczk" (February), choice satire of the gun-bugs. His "Part-Time Soldier," p. 12, this issue, was his last assignment before joining up. Now, we're looking for that "human interest stuff" promised.—ED.)

EXTRA MAILINGS

Boise, Idaho.

Editor:

Allow me to make a suggestion in regard to the RIFLEMAN magazine.

Every month I get three copies. One on my personal membership and one each as Instructor for the Boise Junior Rifle Club and as Secretary of the Boise Rifle and Pistol Club.

The personal copy I keep at home and the other two I take to the range for the various members to look over. Inasmuch as both clubs use the same range for a club room, I believe that only one of the club copies is really necessary and I, therefore, suggest that you cut out the copy being sent to me as Instructor of the Boise Junior Rifle Club. You could do this at least for the duration or until the paper shortage is relieved.

It is also quite probable that there are numerous other such places where your circulation is duplicated and might result in a considerable net saving in circulation.

Rupert Shaw.

PRACTICAL STUFF

Anthon, Ia.

Editor:

May I make the following suggestions which I believe would be of interest to many NRA members?

Item 1. Where you refer to magazine delivery in the RIFLEMAN, request that because of irregular delivery under the stress of war conditions, no advertiser in the Arms Chest sell any item advertised until the 12th of the month. This will give everyone who receives his copy late an equal chance.

Item 2. Give us more articles such as the one on making "Good Pistols from Cheap Rifles," and rigging up the .50 caliber Winchester for a coyote gun, etc.

Joe Cross.

NRA MEMBERS' MEETING

The 72nd Annual Meeting of Members of the National Rifle Association for the election of Directors, and for the transaction of such other business as may properly be presented, will be held Friday, September 17, 1943, 8:00 p. m. at the Hotel Mayflower, Washington, D. C.

All members of the Association have the privilege of the floor, but only Life and Endowment members may vote.

The President has appointed a Nominating Committee which will meet on August 8th to consider suggestions received from voting members. The Committee will nominate a slate of twenty Life and Endowment members to be voted on at the Members' Meeting, to serve as Directors for the three-year term ending in 1946. The names of these nominees will be published in THE AMERICAN RIFLEMAN for September. Additional nominations may, of course, be made from the floor of the Meeting.

NEW BOOKS:

"MEN AT WAR"

Edited by ERNEST HEMINGWAY.

This is to be a collection of the "best war stories of all times." It is that and more. It really is a cyclopedic compilation of man in battle. In point of time it ranges from David to Hemingway. In place it carries us from Prescotts "Death of Montezuma" to Frazier Hunt's "I Take Vladivostok." In battle equipment we first see bows, slings and arrows. The development of man's fighting tools is traced to aircraft, submarines and all the modern *impedimenta*. Even the consistent reader will find here some narratives he may have missed, and he will enjoy rereading the old battle classics. It all is interesting; in some places it seems "unbearably touching."

The plan of the book is based on General Clausewitz' plan. The arrangement has no especial merit or interest to most readers. One characteristic is the quantity of material given by professional writers. There are three stories each from Tolstoy and Hemingway. Two from Victor Hugo. It seems that more stories could have come from the pens of active soldiers and fighters. There seems to be too little said about strategy which would appeal to many readers who like the mental as well as the mere physical aspects of battle. The introduction by Hemingway adds an interesting personal attitude toward war and toward the makers of war, although the book is able to justify itself with no aid from the introduction. In future editions, brief biographical notes about the authors of the sketches and also about the issues involved in the battles named would make the volume of greater interest to the ordinary reader. Man in battle is man at his best and bravest.

Hemingway, Ernest, Ed. "MEN AT WAR; the best war stories of all time": with an introduction by the editor, based on a plan by William Kozlenko, 1072 pages, $3.00, Crown.

ANTI-JERKER

Lt. Ernest C. Carlson, of the 385th Infantry Regiment, has invented a device which records a soldier's efficiency in trigger-squeeze.

Unofficially it is known in the 76th Division as "The Anti-Jerker." Officially it is the "Carlson Trigger Squeeze Device."

The new gadget consists of a glass tube containing colored liquid which is connected to the trigger by a rubber tube. The glass tube is attached to a stand. The end of the rubber tube is placed between the trigger and the trigger guard. When the soldier takes up the trigger slack, the liquid jumps quickly in the tube and then stops. Then, with the proper squeeze, the liquid will rise slowly.

If the trigger is jerked, the liquid will rise quickly and then fall back. A scale on the glass tube measures the movement of the liquid and shows the soldier's efficiency.—From *Army Times*.

SHELBURNE FALLS MATCH

The Second Annual Small Bore Tournament held at Shelburne Falls, Massachusetts, on June 13 was more than just another tournament. It was more like a reunion or an outing attended by such well known shooters as Thurman Randle, Bill Woodring, Dave Carlson, Harold Allyn, the Lacy brothers, Tekulsky brothers, Art Jackson, Janet Lewis, Eleanor Dunn, Audrey Brockmann and many others. Ten states and the District of Columbia were represented.

The range, situated as it is just off the beautiful Mohawk Trail, is one of the most pleasant spots a person could imagine. The competitors were so charmed with the setting and the fact that they had a chance to shoot that little attention was paid to the scores as they were posted on the bulletin board.

The boys in Shelburne Falls know how to run a match as was demonstrated by the fact that each match was started right on the minute as called for in the program and in spite of two showers, finished on time.

Bill Woodring, East on a business trip over this week-end, took advantage of the chance for some shooting and, using equipment he borrowed at the range, won the 100 yard Any Sight Match with a 400-32X score and got into the money in two other matches. Jack Lacy, using iron sights in all the matches, was runner-up in this 100 yard match with a 400-22X score.

Dave Carlson was in his usual top form and only dropped one point in his first hundred record shots but was washed out with the rest of the second relay in the 100 yard Any Sight Match by a sudden downpour of rain.

John Hollar, an Expert class shooter from Bellows Falls, Vermont, topped the whole field in the first event of the day, a 20 shot match at 50 yards with any sights, with a 200-17X. But it was Lester Jeffery who was the outstanding performer in Expert class, being in the class money in six of the eight matches and topping the class in four of them. Jeffery's home is in California but he is now stationed at Newport, Rhode Island, helping Lieutenant Commander Randle teach the Navy to shoot small arms.

Ensign Janet Lewis, shooting in Sharpshooter class and using iron sights throughout the day, fired second high score for the match in the second 50 yard Any Sight Match, a 200-16X and was beaten for consistent shooting in that class only by Joseph Waltzer from New York.

Lew Weatherbee from New Haven, Connecticut, shooting in Marksman class, tied the high Master in the 100 yard Iron Sight Match, both with 200-12X and was runner-up in the Dewar Course Aggregate, Dave Carlson and he having the only 400 scores for that match. —P. H. TEACHOUT.

FREE FOR ALL

The Karl Ross Post of the American Legion at Stockton, Cal., was the sponsor of a free for all .22 caliber match on the outdoor range of the Roberts Island Rifle Club of Stockton. The shooting was all offhand shoulder-to-shoulder with no holds barred. There were no restrictions as to rifles or sights.

C. G. Barthold won the 1st prize, a $25.00 Defense Bond, with a score of 186. Second prize, $10.00 in Defense Stamps, was taken by Capt. Chaudron with a 183. Another 183 chalked up by H. Williamson netted him $5.00 in Defense Stamps

FLORIDIAN ROUNDUP

C. Verne Klintworth of Tampa won top honors in the NRA registered Class "C" pistol tournament sponsored by the Floridian Pistol Club on July fourth. His aggregate score of 853 x 900 topped that of D. C. Bailey, Tampa Police Dep't, whose 841 ran him a close second. John Flaherty of the Coast Guard took third honors with an aggregate of 835.

In the four matches Klintworth won High Master in slow fire with a score of 179; timed fire with 195; rapid fire with 194, and High Master in the National Match course with 285.

High Master medal was taken by Ralph Kirk of the Navy with an aggregate of 833. E. H. Laycock won High Expert with an 830. A. C. Yonally of DeLand made a clean sweep of the Sharpshooter Division in all five matches. His total was 816.

The 50 yard slow fire match was taken by M. D. Sinclair with a score of 180. R. E. Newberry of St. Petersburg won High Expert with 176. J. C. Harkness with a score of 194 topped Ralph Kirk's 194 to win High Master in timed fire, while Bailey and Kirk pushed Klintworth hard in the rapid fire event with 194 and 193 respectively.

FORT KNOX MATCHES

Marksmanship of Technical Sergeant Joe Benner, second ranking pistol shot in the nation, and the Great Lakes Pistol Team of Detroit featured pistol matches sponsored by the Armored Force School's Demonstration Regiment at Fort Knox on June 13.

Sergeant Benner, an instructor in the Armored Force School Gunnery Department, dominated the individual events. Thirty-eight shooters, both military and civilian, from six states competed in five individual events, all of which Benner won.

Final match on the day's card was the Colonel's Trophy Match for four-man teams. The Great Lakes pistolmen nosed out an Army team by four points to win the attractive gold and wood trophy awarded by Colonel George H. Millholland, Commanding Officer of the Demonstration Regiment.

.22 caliber slow fire match: Benner, 190; Taylor Gabel, Cincinnati Revolver Club, 181; Lester Thomas, Great Lakes, 178. .22 caliber timed fire: Benner, 199; Staff Sgt. James Tumlin, 20th Armored Division, Camp Campbell, Ky., 195; Thomas, 194. .22 caliber rapid fire: Benner, 199; Tumlin, 193; Gabel, 193. Aggregate of first three matches: Benner, 588; Joseph R. Anderson, Great Lakes, 568; Thomas, 565.

Center fire with .38 or .45 caliber pistols: Benner and Gabel each scored 285, Benner outranking on his rapid fire. Joseph Nicoden of Great Lakes was third.

Colonel's Trophy Match for four-man teams, each man firing 10 shots at 50 yards: Great Lakes (Nicoden, Thomas, Anderson and Charles Hood), 333; Army (Benner, Tumlin, Chief Warrant Officer Morris L. Myers and First Sergeant David W. Reichenbacher of Demonstration Regiment), 329; Southern Indiana Rifle and Pistol Club, 286; Cincinnati Revolver Club, 258.

COMING EVENTS

Registered Class "C" Tournaments

Michigan, August 8—Mid Summer Pistol, Flint. A. J. Marxhausen, 2521 Thomas Street, Flint.

August 15—2nd Annual Police Pistol, Ann Arbor. Lt. Caster Enkemann, Police Department, Ann Arbor.

Indiana, August 22—Southern Ind. Open Pistol, Utica. E. R. Branham, Box 407, Jeffersonville.

Ohio, August 28-29—10th Annual Open Small Bore, Marietta. H. W. Meiser, 621 7th Street, Marietta.

West Virginia, Sept. 5—6th Annual State Pistol, Fairmont. L. A. Hess, P. O. Box 529, Fairmont.

Nonregistered

Minnesota, August 8—Small Bore Rifle, Virginia. E. F. B. Johnson, 307 4th Street, So., Virginia.

August 22—Pistol, Virginia. E. F. B. Johnson, 307 4th Street, So., Virginia.

SPARROWS POINT PISTOL

With an entry list of 103 competitors and a representation from Quantico Marines, U. S. Coast Guard, Maryland State Police, and civilian and police pistol clubs from a wide area, the Sparrows Point Police again indicated their ability to attract the cream of the crop for a tournament, even in the midst of war time restrictions.

Two new national records were established, as an indication of the hot pace set by the imposing list of big name shooters.

Lt. Harry Reeves collected a 297 over the Camp Perry Course with the .45; then he and his team-mates went to work on the Service record of the .22 caliber National Match Course, totaling a new high Service score of 1161. Had the .45 caliber four-man team match been squadded as a team match, instead of compiling the scores from the individual event, another new record undoubtedly would have been established. Their 1143 was the aggregate, but could not be considered for record. Reeves, Shapiro, Barrier and Brown made up the hot-shooting squad of Quantico's number one team.

Twenty teams made up one of the largest pistol events of the current Eastern season. In the .22 caliber four-man team, Broomall Sportsman Club's number two team placed second to the Marine's new Service record score. Free State R. & P. Club was third and U. S. C. G. Manhattan Beach Training Station, fourth. Only ten teams were entered in the .45 caliber four man, with service teams taking the first four places. Marines number one, 1143; Marines number two, 1086; Coast Guard, 1074.

Center Fire Four-Man Team—Marines number one, 1087; Sparrows Point Police, 1063; F. O. P. Wyomissing, 1049; Free State, 1037.

Fifty yard Slow fire—.22 caliber; Reeves, 190; Dr. F. F. Sowers, 185; Major E. O. Swanson, 185. National Match Course—.22 caliber; Reeves, 295; T. E. Barrier, 290; E. B. Hale, 289. Camp Perry Course—.45 caliber; Reeves, 297; Barrier, 288; Swanson, 285. Center Fire. N. M. C.—Reeves, 293; Shapiro, 287; Swanson, 281.

OFFHAND MATCHES

The "more deadly" sex represented by Mrs. Cecelia Thimmesch of Liberty, Iowa, pushed Samuel Clark, Jr., of Oakland, Maine, to his limit to win the 50 foot 100 shot Championship, offhand, in the running of the Twenty-Fifth Annual American Indoor Record Matches held as a postal match conducted from Monett, Missouri. Clark ran his score up to 2479 out of a possible 2500. Hot on

(Continued on p. 42, 3rd col.)

ON THE FIRING LINE

A GOOD JOB

A West Virginian graduating from the Small Arms Firing School of the Clarksburg Rifle Club was inducted into the service some time ago. He had had "practically no familiarity with firearms before taking the course."

He became Battery Clerk for his outfit and because of this was excused from taking the Army's basic rifle training. When it came to firing on the range, however, he went out and cleaned up the whole outfit. He was high man in his battery, topping it off with a 200 yard possible in rapid fire.

His Battery Commander, inquiring into his training, quizzed him particularly about the Small Arms Firing School at Clarksburg "for two hours." Then he sent him to represent the Battery at a Divisional rifle quiz where he scored 97.5 per cent.

His BC sent to Clarksburg his personal commendation on the work of the Rifle Club. But, Judson Bonsall, Executive Officer of the club, feels that "the credit should really be divided between the NRA for developing such a splendid course of instruction and the conscientious, painstaking instruction of our faculty."

A PLEA FROM PFC. ROY HANKS

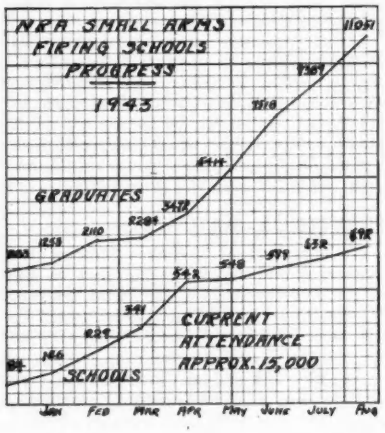
Here at Miami Beach I have been given the same basic training in the handling of firearms that all other trainees receive. I did not have more than two hours of instruction altogether on all three guns (Enfield, carbine and Tommy Gun) before going to the range. I fired 50 rounds with the Enfield, 30 rounds with the carbine and 25 rounds with the Tommy Gun.

Of course, there is a reason for this short training period. We have a lot of men to train in a very short time and darn few competent men to do the training. For heaven's sake, let's get more classes in rifle marksmanship going for these boys who are coming into the Army every month.

A Chaplain, the other day, told me that the one thing our boys in the Pacific area needed most was training in marksmanship.

In the last World War General Pershing begged for men well versed in marksmanship. He received men who didn't know how to load a gun. Let's not repeat those mistakes. We cannot afford to do so.

Please pass the word along to the rifle clubs that there is nothing they can do to better help the war effort. Those not doing it should *start today*. The reward will be the satisfaction of helping those boys become better soldiers with a better chance of coming back alive.



QUALIFY YOUR INSTRUCTORS

Quality in our instructors is as important as having a lot of them: The sure way of establishing claim to quality is to have all instructors officially qualified by the NRA. All information regarding such qualification is yours for the asking. Complete instructions, appropriate examinations and all other information will be provided if you ask NRA Headquarters for it. When applying specify as to whether it is rifle or pistol and revolver instruction in which you are interested.

Requirements for Instructors are simple and few. Instructors must be members of the NRA of at least 21 years of age and must have completed 100 hours of instruction work in an approved Small Arms Firing School. Assistant Instructors need be no more than eighteen year old members of the NRA and have not less than 30 hours of service as an instructor. Military instruction or other reasonable instruction service.

All instructors in NRA Small Arms Firing Schools should have this distinction in proof of their qualifications to act as instructors. It is personal insurance as well as satisfaction. The new certificates and brassards brand the owner as a well informed and experienced representative of the organized shooting game.

John George

(*Killed in Action*)

Reported missing in North Africa in September, 1942, Lance Corporal John George, author of "English Pistols and Revolvers" and other works on arms and shooting, has recently been reported killed in action with the British Army.

At the opening of hostilities George was among the first to volunteer. He enlisted as a private and was seriously wounded in the debacle at Dunkirk. When he recovered he went to Africa with his outfit, the Queen's Own West Kent Regiment.

His going will be keenly felt by the shooting fraternity of which he was such an active and enthusiastic member. His first book published in America achieved considerable success and made him well known to many American shooters and collectors. A companion volume written by him will be published after the war.

Guy W. Morehouse

Guy W. Morehouse, well known smallbore rifleman of Poughkeepsie, N. Y., died suddenly on June 22 from a heart ailment. He was born Feb. 15, 1897 in Poughkeepsie where he spent his entire life. An automotive salesman, he covered the valleys of the Hudson and the Harlem. He is survived by his wife and three sons, two of whom are now serving with the Army Air Cadet Corps.

Winner of innumerable matches and of many smallbore championships, Guy was a familiar figure on Eastern ranges. He was especially fond of shooting with his many friends of the Connecticut clubs.

Guy was President and Statistical Officer of the Poughkeepsie Rifle Club and Executive Officer of the Mid-Hudson Rifle League. The success of his home club and of this league has been due in large measure to his superb organizing ability and his indefatigable energy. In his shooting, Guy was definitely an individualist. His unique shooting positions and the sawed-off, high-tailed, taped-together stock of his gun will be missed on the Eastern firing lines.

The Poughkeepsie Rifle Club and the smallbore fraternity as a whole have sustained a decided loss through his untimely passing.

Perry D. Frazer

Perry D. Frazer, well-known RIFLEMAN writer and former editor of *Field and Stream* magazine, died at his home in Ridgewood, N. J., at the age of 77.

Mr. Frazer was the founder of the New York Angler's Club and for 15 years edited sports magazines in New York. In 1926, he retired from magazine work to spend his time in the preparation of books and articles on gunsmithing, fishing and general outdoor sports. His last book was "Elementary Gunsmithing" published in 1938.

The shooting game, including the National Matches, was followed closely by Mr. Frazer, and gave him constant material for observations and anecdotes which he put down in such interesting style. His passing marks a great loss to the literature of the outdoor sports.

OFFHAND MATCHES

(*Continued from p. 41*)

his heels were John Tokar of Detroit, Mich., with 2475, Eli G. Cook of Lake Beulah, Wisconsin, with 2472, Harry P. Frohm of Wilkes-Barre, Pennsylvania, with 2462, and Mrs. Thimmesch with 2460. According to Sergeant Don Thimmesch, husband of the lady, this is her first experience in the 100 shot event. This match was fired on the one-eighth inch ring target.

In winning the 50 foot 10 shot King Match, Eli Cook offered a beautiful group with all shots cutting well into the 25 ring of the eighth inch ring target.

Harry Frohm won the 75 foot 100 shot Championship, the Royal Course of the Old Champions, over a field of 54 shooters. His score of 2477 out of a possible 2500 on the three-fourths inch ring target won him the Roderick Trophy, a beautiful loving cup with his name engraved on it.

The 75 foot 10 shot King Match threw three men into the limelight with 248 each out of a possible 250 on the three-fourth inch ring target. Mike Altman and Harry Frohm each had a 24 on his target and Mike's 50 points on his last bull topped Harry's 48 and gave him the match. A 23 in the string of C. T. Westergaard gave him third place over a card of 39 contestants. The winner received an engraved gold medal.

To O. J. Rohlf went the 75 foot 3 shot Honor Match with a score of 74 x 75. Five other 74's pushed him for first honors but Rohlf topped them by having most shots near the center.

DOPE BAG ☆ ☆ ☆ Conducted by F. C. NESS

THIS MONTH:

Combustion Control · Compressed Loads · Front Ignition · Chamber Shape · H. V. .30-caliber Revolver · Buckshot and Slugs Center Dots · Nylon Reticules · Lucite Crosshairs · Improving Old-Timers · .228 Ackley Magnum · Light Lead Loads · .257 Roberts Load · Glass Bullets · Crow Shooting Dope · The .276 · Trade Dope.

Chamber Efficiency. After all, it is the chamber of any given caliber which governs combustion performance, the case being essentially the gas seal for the gun and the envelope or package for the powder charge. It is stoppered by the bullet in one end and sealed by the primer in the opposite end, but neither of these components is an essential part of the cartridge. We could and sometimes do, shove the bullet into the barrel ahead of the case and we could dispense with the primer by using a fuse, electrical ignition, or, perhaps, sufficient heat externally applied would ultimately be transmitted to the powder charge. We do have pre-ignition after cooking a subsequent round in a rifle chamber pre-heated to the red stage by sustained fire, but I have not heard of a primerless or dead round being so fired. Possibly it could be done.

The power and energy developed by the burning powder is transformed into heat and motion both of which are imparted to the bullet and to the gun. Our ideal is to transform all of our combustion energy into bullet velocity. On account of heat, friction, recoil and gas escape that would be quite impossible, but we should do better than the usual 30% to 40% efficiency. This remaining 60% to 70% wasted energy is of great concern to experimenters, some of whom have succeeded in improving chamber efficiency appreciably.

One way of controlling it and directing its work is to use a balanced load of the best available powder for the given chamber and components. Another way is by changing the chamber to a different capacity or to a different shape, particularly the latter with reference to the diameter ratio of chamber and bore and also with reference to shoulder shape. An abrupt bevel, body to neck, or a square shoulder, in many cases seems to promote efficiency by churning the gases of combustion back upon themselves, particularly when the slower burning propellants are used with the lighter bullets of low S.D. (sectional density). Some believe that the long sloping shoulders of the .300 H. & H. Magnum and .219 Zipper are best adapted for heavy bullets, while the shorter and sharper shoulders of the .270 Winchester and .348 Winchester are better for lighter bullets.

With either type of chamber, combustion efficiency can be improved by so balancing bullet weight and powder type or burning characteristics that a full case of powder can be used without exceeding safe pressures, on the one hand, and without failing to reach adequate burning pressures on the other hand. I have in mind Glen Hogan's case-filling load of No. 4350 in the .30-'06 and our caseful of No. 4198 in the 2-R Lovell. Years ago I got match accuracy in the .30-40 Krag by seating the 110-grain bullet on No. 17½ powder loaded to the mouth of the case.

The K-Hornet is remarkably efficient, but it is not well adapted for No. 4198 powder and, against a caseful of this propellant, it does much better with regular loads of No. 4227 and No. 2400, as does the regular Hornet. The Maximum Lovell holds 1½ grains more of No. 4198 than the full-capacity 2-R but does not give sufficient improvement, if any, over 2-R ballistics to warrant its increased consumption of powder. Other enlarged Lovells hold even more powder or up to 3 grains more than the 17-grain 2-R. In view of the relative weakness of this light case I question the wisdom of going to such extremes.

Many cartridges, including the .22 Varminter, show improved combustion efficiency when a caseful of No. 4350 is used behind bullets of suitable weight. It is quite possible that those reloaders who have trouble with this powder in the .30-'06 do not use enough of it to get efficient combustion and so get pressure-wave manifestations short of the peak load. This could not be safely determined without a long string tied to the trigger and it were best done with laboratory equipment such as a pressure-gun and chronograph.

Even these carefully balanced compressed loads are further improved in combustion efficiency by front ignition. Mr. Gerry did well with his extended flash holes in such loads as the .276 and .280 Magnums. I mentioned them in the Dope Bag several years ago when the O.K.H. Duplex was doing its strip-tease publicity act in the shooting papers. At that time I was accused of guessing incorrectly that the "Duplex" of O.K.H. loads indicated a double charge. Elmer Keith informed me no combination loads of powder were involved.

Now, for the first time, I am going to venture a guess that the O.K.H. Duplex is a combination of any pair of the expedients for improving combustion efficiency which I have mentioned above, most likely the compressed load with front ignition. It is doubtful, however, that such long-used and well-known expedients could be claimed as original or be patented. For the benefit of any disgruntled readers, I will say that these pending patents have been responsible for our failure to get the dope on the O.K.H. Duplex loading methods for publication.

The improvement of chamber efficiency through the means of altered shape are well known to AMERICAN RIFLEMAN readers. Examples are: the Kilbourn-Hornet, Improved Zipper, Lovell .22 H.P. Savage, Miller .22-.348, Gipson .270 Newton and others. All of these seem to be pronouncedly more efficient than the standard loads from whose cases they were fashioned. Other efficient loads which reflect balanced capacity shape and loading are the Donaldson Wasp and the Marciante Blue Streak.

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Dr. J. G. Kirk, now Captain Kirk, has returned from England to his home in Listowel, Ontario, where, before the war, he was known to many of our readers as a handgun fan and competitor. As an instructor abroad he became much discouraged over the type of firearms knowledge he encountered and because of the apparent lack of shooting information. Accordingly, he has prepared some mimeographed dope on handgun cartridges and on defensive shooting with handguns to help fill that void. Of these, I have received six legal-size sheets single-spaced and crammed with dope. Its definite description (with simple line drawings) and identification of those least known British .380 and .455 handgun loads was what I appreciated most.

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Interesting Revolver. Ward R. Betz of San Jose, California, now an Army Captain, had allowed his shooting ideas free play until the war came along. He had used zinc bullets, duplex loads, wild-cats and such stuff, including the .30-'06 necked down a la Henlein. His last idea was worked out and tried before it became too late. This was a long-range handgun for those jacks and coyotes which kept out of range of the regular handguns.

Leslie Lindahl did the mechanical work; on a Model-1917 revolver and a .30-30 Winchester barrel. The new cartridge was the .357 Magnum necked down to take .30-caliber bullets. The .45 A.C.P. chambers were bushed with a self-tempering steel and the barrel was cut to a legal 8¾ inches, threaded and pinned to the frame. The 110-grain O.P. bullet did not pan out well enough, but the 93-grain Luger bullet proved to be a natural. The first charge, 2.5 grains Bullseye, failed to drive the bullet out of the barrel. Then the charge was increased until the noise and disturbance of the .38-44 revolver were approximated. Equivalent loads of No. 80, No. 2400, No. 4227 and No. 6 were developed in turn. Then duplex and triplex combinations of No. 6, No. 80 and No. 2400 were carefully developed until the final charge aggregated about nine grains weight. At this point the triplex load was clocked over 200 yards for an average speed of more than 1400 f.-s. The additional velocity back to the muzzle was estimated at 300 f.-s. for an m.v. of 1700 f.-s. or more.

The front sight was a King post with reflector, on a Springfield muzzle band, and a folding, Marble, Semi-Buckhorn, rear sight was used. The .30-caliber pills carried to the mark at 500 yards when the post top was held level with the top of the rear sight. Jackrabbits were brought down at 200 yards and those hit stayed down. No coyotes offered themselves as victims. This outfit was named the .30 B-L (Betz-Lindahl) Magnum,

THE .30 B-L REVOLVER

when developed back in 1941. It has almost the power of our present M1 .30 caliber carbine.

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Buckshot and Slugs. Karl Foster fathered the American rifled slug for smooth bores and Norman Powell developed rifled tubes for shotguns. The two were brought together last year when Powell tried some of Foster's hollow-base slugs in his muzzle tube rifled with a pitch of 1 turn in 24 inches. The groove diameter was .715 inch and the bore, .700 inch. The Foster slugs were a push fit showing land impressions of between .001 and .002 inch. Factories filled the hollow-base of these slugs with a paraffin wax. Powell filled it with his toilet tissue wadding. He loaded the slugs in Super-X cases after removing the factory shot charge. Those loaded with filled bases seemed to give better accuracy.

Powell found the recoil milder than with his single-ball loads similarly used. He could keep these in a 6-inch target at 50 yards with his rifled tube. All but two of the shots fired at 100 yards would have hit a deer and a half-dozen of them would have hit a sitting woodchuck. It was a hot day in August and Powell had to wipe sweat from his glasses before each shot was fired. Even so, he had 5-shot groups of 9⅞ and 8½ inches out of the 17 shots tried.

In our own latest tests we tried some Federal rifled slugs. In 12 gauge these were .695 inch. Our 14-gauge Powell rifled tube put 4 out of 5 in 8.12 inches at 50 yards. Our .715-inch rifled tube put all 5 in 10.75 inches. The Weaver ¼-choke tube put 5 in 10.38 inches. There were 4 loads left for 100 yards, and the .715-inch tube put them in 17.25 inches at that range. We also tried standard shotguns with these Federal slug loads. The M-90 Marlin with 16-gauge barrels put 4 out of 5 in 8.12 inches at 50 yards using the modified choke. The 20-gauge modified barrel put 4 out of 5 in 8.70 inches. The Winchester and Peters rifled slugs did better in this 20-gauge barrel with all 5 in 3.20 and 4.00 inches respectively. At 100 yards we tried 5 of the Peters and got them in 15.70 inches.

We also tried Federal Buckshot with nine 00 pellets per 1¼ ounce load in 12 gauge. The .715-inch Powell rifled tube gave no hits at 50 yards in three trials on a 28-inch target, but the 14-gauge rifled tube gave 6 hits at 40 yards, 5, 5, and 4 hits per shot at 50 yards and 3 hits at 75 yards with the same outfit. The Weaver ¼-choke gave 5, 5, and 7 hits at 50 yards, the latter having all 9 pellets in a 30-inch circle at that range.

Powell had the same experience with his rifled tube and No. 00 Buckshot. He got only 3 hits on a 3-foot square at 50 yards, and then substituted his .695-inch hardened-and-ground smooth-bore tube. This put all 9 pellets in a 30-inch circle at 40 yards with 7 in less than a foot-circle in the center of the pattern.

For some reason or other, better accuracy has been reported for the 16-gauge than for other gauges. With the rifled slug in this gauge the factory reported 5-shot groups of 3.8 and 5.25 inches at 50 yards, and 9.73 and 11.25 inches at 100 yards. Our own 10-shot groups were 6.13 and 5.75 inches at 50 yards and 13.25 inches at 100 yards. With a full open (cylinder-choke) adjustment on the Poly Choke on a 16-gauge pump with peep rear sight we had 5-shot groups at 50 yards of 2½, 3¾, 5¾ and 6½ inches.

Powell had an idea that a shortened rifled tube would handle shot charges better than the normal 3¼-inch length. He cut it down to 2 inches and it seemed to do nearly as well as before with single-ball loads. The bore diameter was .640 inch and the groove diameter, .650 inch. It did very much better with shot loads, giving even distribution and uniform spread from pattern to pattern at 40 and 50 yards. The hits were 73 pellets of No. 6c on a 14-inch target at 30 yards, 38 and 49 hits at 40 yards, and 24, 28, 29, and 30 hits at 50 yards. The latter long-range averaged 1.29 hits per 3-inch square. This is roughly equal to 100 pellets in the 30-inch circle at 50 yards and to 150 pellets at 40 yards. The loads used were Shur-Shot (1-ounce) and Super-X (1⅛ ounces).

In our M-37 Ithaca 12-gauge equipped with Powell rifled tubes we had good accuracy with ball and rifled slugs in most tubes and in the 14-gauge rifled tube some practical shot patterns up to 50 yards. These results were reported in THE AMERICAN RIFLEMAN of July, 1942. Also see Powell's article in this issue, page 36.

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"Miracle Dot" is what pleased customers of T. K. Lee call his center-dot reticule. Since Pearl Harbor he has been making them of a material which makes them really round. On a fine cross-hair these black dots seem to float in the center of the field. On varmint scopes he has been installing them in pairs sometimes on the vertical wire but usually on two cross hairs, the second horizontal hair being just below the center and bearing a smaller dot covering half as much as the center dot which latter has been standardized more or less at an inch per 100 yards. He has made some special jobs with multiple dots and even with a dot on cross hairs within a small center aperture. I had the double-dot, as described, installed in my big 20X Hubalek, and it is easy to understand why the hawk hunters like them for those occasional long shots way beyond 200 yards. According to our records, every job has been delivered promptly by T. K. Lee and each has been up to or better than expectations, regardless of type of scope. These have ranged from low-power Weavers to Super Lymans, the latest job he did for me was a new dotted cross hair installed in my old B. & M. 7X target scopes. T. K. takes 'em as they come apparently and returns them nearly the same day.

The picture shows T. K. Lee (on the right) "squinting out" his famous center-dot reticules. The shop, not all shown, has 2,000 square feet, the installation room being shown. This is kept practically dust-free. It is illuminated by triple fluorescent tubes 4-feet long, and magnifying lights are also necessary. The invisible right wall is covered with small tools.

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"Bob" Thiel, of Hamburg, New York, came through with some dope on reticules. He separated some Nylon thread into its individual strands and used these to make smaller cross hairs for his 8X Winchester and 330 Weaver scopes. He said it was extremely thin, elastic and uniform, making it desirable material for reticule construction. He quartered the reticule ring, using a draftsman's divider, and laid the strands in these prepared rim notches, holding them with rubber bands while inspecting them, under scope conditions, through the eyepiece. Then they were drawn taut and held with a drop of liquid cement. After setting for 24 hours, trimming and assembling completed the job on the 8X. The 330 Weaver was similarly equipped and a second horizontal hair was added to form a long-range-aiming cross hair below the center cross. Thiel said red Nylon thread strands seemed to give the best definition. The jobs were tested for six months and many rounds of heavy .30-'06 loads were fired before Thiel wrote us about them.

Another reticule material, recommended by a local friend and successfully tried in several scopes, was the plastic Lucite in solution. The liquid draws out to practically any degree of fineness and it adheres to the rims of the reticule cell when stretched across it. A gob or drop of the same material holds it, as it dries rapidly and stays taut. So far these Lucite cross hairs have withstood the recoil of normal loads, but they have not been tested with the heaviest .30-'06 loads with the .300 Magnum or with equivalent loads. The clear liquid solution is very similar to the old familiar Collodion in smell, consistency and appearance. Since Lucite is a Dupont product, it could probably be obtained from their distributors. It is shaved or cut thin and then dissolved in amyl acetate.

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Letter from Layne. I was much pleased at the way you handled my correspondence

T. K. LEE WORKSHOP

in the March Dope Bag under the heading of the .38-55 cartridge. You really did a nice job whipping my dope into shape fit for publication. I have received quite a number of letters from interested shooters asking various questions. These ranged all the way from offers for my rifles to requests for cast bullets.

The biggest difficulty found in putting the old single-shots into service again is the fact that in all of them, except the Sharps and Winchester S.-S. rifles, the groove diameter is usually excessively large in relation to the inside neck-size of even a fully-expanded fired case. In some instances the cases can be inside-reamed to take a properly-oversized bullet but usually they cannot. The way out of this is to have the chamber enlarged slightly, but here we find that usually a chambering reamer is required and then, when the enlargement is made, we find we have made a "wild-cat" out of our rifle.

As a case in point I have at present two very fine S.-S. rifles in my cabinets which show just such a condition. One, a perfect Pacific Ballard, practically brand new and in the finest possible condition but having its .32-40 barrel a full .324 inch in the grooves, whereas the chamber is a bit on the tight side. The other one is also a Pacific Ballard, in perfect shape and with a No. 4 barrel in .40-70 caliber and having a groove diameter of .406 inch and also a minimum chamber. This rifle has new hardened action pins and a fine high-comb scope-height stock. As it is, I cannot use either of them without exacting and bothersome alteration to the chamber dimensions. Therefore, they set unused in my gun room.

As soon as P. O. Ackley's services are again available I will have him recut the .40-70 barrel up to a standard .45-70, and then I will have a new one to play with. Also have him reline my big Buffalo Sharps for his improved .22-3000. This will make up into a very interesting rifle as the outside finish and all parts are original and in wonderful condition. As to Ackley's work I have examined several of his jobs and also his reline-conversions, and have found all to be strictly top-flight in every way. I can recommend his work. At present he is doing none for the general public.

Today it is snowing hard and cold, two feet of hard snow over this high mountain valley. Business only so-so, but I'm fortified against life's minor irritations to some extent. Prime hams and bacon hanging up ready to eat, a gun room full of the best and plenty of components and tools. Plenty of war bonds in the bank box and the shelves still full of merchandise. The big dog snoring at my feet in the warmth of a pitch pine fire. Guess I'm setting pretty.

An incident just happened to interrupt this letter. I heard a disturbance in the trees 30 yards from my office window. I glanced out and saw a large hawk flying low. Also saw a bird's head peering out behind a tree trunk. I thought it was another hawk so grabbed my little .25-20 carbine with the Weaver 29-S on it from its concealed rack under my desk. Opened the back door a crack and focused on the head in the dim light of the falling snow. Pulled the trigger and something fell out of the tree. My Rex dog rushed out and came back with a fine, fat, big blue grouse. It was my mistake of course, but still I am going to eat that grouse. I have just dressed it and, as there are no fir buds in its crop and it's fat, I hope it will taste fine.

Have you noticed what peculiar quirks a gun hobbyist's mind takes? There is Walter Roper shooting that horrible-looking little single-shot .22 pistol with great pleasure. Elmer Keith playing with his big .50 Sharps and using the wrong loading technique on it in a vain effort when he knows better. Jim Wade has a mania for picking up odd and unusual scopes and binoculars. He has a pair of Busch 24X binoculars that look like a pair of spotting scopes fastened together. His spotting scope is over 40 years old, as big as a stove pipe and in a trunk case with accessories. It was originally an astronomical instrument. This is some foreign glass; he traded around until he got it for about $40.00. It must have cost, originally, several hundred dollars. It can be focused down to 50 feet. On a clear cold day, one can tell the time on an alarm clock at nearly half a mile. He spots .30-caliber shots in the white paper at 600 yards with it under certain conditions.

Another friend, a merchant, is using, with entire satisfaction, a pair of fancy, engraved, pearl-handled S. & W. Russian revolvers of .455 caliber which he imported from England and for which he paid about $15.00 for the pair. Even L. E. Wilson, the modern Dr. Mann of our day, is toying with the idea of having a go at the cast-bullet game and wants a Pope muzzle-loading .38-55 with original accessories. I am preoccupied with trying to make the Schuetzens shoot, even though I have several gun cabinets full of fine modern rifles, loading tools for them, a dozen of the finest handguns in captivity and a filing case full of dope on proved and standardized loads.

If I were asked to rate modern rifles on a basis of real merit as to accuracy, ease of reloading and suitability for given uses, I would place the following at the top of the list: .22 R-2, .22 Varminter, .250 Savage and .30 Newton [select barrels implied].

Must now close this overly long letter. Tell me of anything new you have bought or tried out. It will be a long time yet till I can get out and do some shooting, so I'm hungry for anything new in the gun line.

So far I've never had the pleasure of meeting you in person. Perhaps that event will take place sometime, so after the war don't be surprised if I should barge into your office with a Sharps Buffalo rifle in the crook of an elbow, a quart of good "licker" in the other hand and long white whiskers down to my knees.

You have been of great help to me in the past and your published work has furnished me great pleasure for many years. Perhaps I owed you a long letter. In any event you are surely getting a long one this time. It will have to hold you for awhile or until I get some results to report—V.E.L.

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.228 Ackley Magnum. Since we published our own results in the Dope Bag, last October, we have had a few reports from other owners of this interesting caliber. Although it is adapted for 60- to 80-grain .228-inch bullets in the .30-'06 case, lighter bullets of .224-inch diameter were used by Davis Hager of Memphis, Tenn. His .228 Magnum had a groove diameter of .2275 inch the same as mine. The pitch of rifling is 1-12, while mine is 1-10. Hager used the 50-grain Sisk-Lovell bullet with 40.5 grains of No. 4320 and the 65-grain 8-S with 39.5 grains of No. 4064. Of these two the 50-grain load was the more accurate. Hager said it was flat-shooting and very destructive on buzzards at 350 to 375 yards.

W. T. Scott of Bloomington, Ill., was experimenting with his .228 Ackley Magnum early this year. He said its groove measured .2285 inch and that it was on a nicely stocked Newton action with double-set triggers. He tried all the suitable powders, 3031, HiVel No. 2, 4064 and 4350, with Western 70-grain .2275-inch bullets and Sisk .2265-inch 63-grain bullets, but the best group he ever got was 1½ inches at 100 yards, or twice the spread of his best .220 Swift results.

Our own experience with the Silcrome, or first, barrel was much the same. This barrel also had a 12-inch twist of rifling. Our best load with the 63-grain bullet was 38 grains of No. 3031 without wads. Our second barrel liked a grain more of this powder with the 70-grain Sisk or Barnes bullet, or 41.5 grains No. 4064 with the factory 70-grain bullets, the very best heavy load being 45.0 grains of No. 4350. In another local .228 Ackley-Magnum the best load, outside of the same 4350 load, was 37 grains of No. 3031 with wads behind the 63-grain Sisk bullet. War-time restrictions on shooting and the relative lack of components have interfered with the development of this cartridge. We were unable to get more of those better 70-grain bullets (Sisk and Barnes) which had shown the greatest promise.

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Cheap and Accurate. A good reduced

INTERESTING CUSTOM HANDGUN STOCKS

On the left: A double-action with generous thumb-rest for a south paw. On the right: A .380 pocket-type auto-loader stocked and sighted for match shooting. Both jobs by Walter F. Roper.

load with lead-alloy bullets for nearly all rifles is a mild primer and enough Pistol Powder No. 5 to give .22 Long Rifle muzzle velocity. This is about 7 grains in the .25 Remington, 7.5 grains in the .250 Savage and 8 grains in the .257 Roberts with 80- to 90-grain bullets; 8 grains in the Krag and 9 grains in the .30-'06 with 140- to 160-grain bullets. Samuel P. Osgood got fine results in the Krag with 8 grains and we have in several calibers with such loads.

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Crow Shooting. A. R. Weeks says there is no crow shooting in his Ontario district in November, December, January, or February, because the black marauders migrate and are then in their winter belt extending across the U. S. from the Rockies to the Atlantic. Nonetheless, he killed 446 in 1939, 525 in 1940, 762 in 1941, and 745 last year. In the first month of 1943, his fresh start on the new season was a bag of 77 crows and 9 chucks. His annual chuck kills over the long period ran, respectively, 214, 239, 292 and 185. One year, he said, a few more than a hundred crows were bagged with a shotgun, the others being killed with his faithful relined 2-R Lovell rifle and handloads with 8-S bullets. The chuck season is generally on from middle March to middle September, although I once killed many chucks later than that in Ontario.

Some of Weeks' observations on crow hunting are interesting. The wary blacks, after months of shooting, continue to feel safe between 150 and 225 yards from the gunner, at which ranges most of them are bagged in his territory. They do not seem to mind vehicles on highways when these are stopped before reaching a position opposite them or beyond them. A distress note on the crow call brings them to the edge of a woods on investigation. From a blind, at least 150 yards away, the first arrival is shot and the others flock in and can be killed in turn, up to a reasonable number, or at least half-a-dozen. If the first shot is missed, however, the matter is definitely concluded right there.

One of Weeks' methods is to wait in his favorite blind, with a book and his rifle, at the edge of a woods harboring a crow roost. This spot was carefully chosen about 175 yards from a group of tall dead trees. It is visited about five o'clock in the evening and no oftener than weekly.

Groups of crows are intercepted with rifle bullets as they straggle in for the overnight roosting and pause for a while in the tops of the dead trees.

On rainy days crows sit around more and seem abnormally stupid. One advantage offered by the 2-R Lovell (also true of the .22 Hornet, K-Hornet and .218 Bee) is its light report which, apparently, the crows do not mind at distances greater than 150 yards. One time a dead crow lodged in a tree crotch and attracted every successive flock of crows on their way to the evening roost and afforded some extra shooting. However, on the next visit with conditions apparently identical, every live crow avoided that dead crow and shunned the immediate area.

A suggestion by Weeks, which is particularly good, is offered for the benefit of the long-range varmint shooters. He suggests that several crows, or one of average size, be stripped of their plumage and then measured. He thinks most shooters will be surprised to learn what a small target has to be struck in order to bag a crow. Broadside, it is 4½ by 2½ inches, and smaller when quartering, or about 2 by 3 inches.

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.257 Roberts Load. U. S. Hubbell uses a 6-groove barrel with a 16-inch twist and metallic sights. His load was 40.5 grains No. 3031 behind the 100-grain Western Silvertip bullet fired with modern N. C. primers. He was 82 years old when he tried 20 shots at 200 yards, getting 14 tens and 6 nines. He said F. A. primers give him even better accuracy.

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Glass Bullets? Colonel Boris d'Adamovitch Leliva (formerly of the Imperial Russian Cavalry) who now lives in Winchester, New Hampshire, points to German employment of glass bullet cores in the last war and asserts his belief in glass as the bullet material of the future. He argues that the relatively light-weight of glass would permit much higher initial velocities, without mentioning the greater velocity-loss in flight on account of the lower sectional density (weight per caliber) of these lighter bullets in a given caliber. He would make these glass bullets sharply pointed imbedding them in lead-alloy sabots for lead-bullet rifles and spraying others with copper-mercury amalgam for replacing full-patch military bullets. Has any experimenter tried glass bullets? We crave information on results.

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.276 Pedersen. John C. Crenshaw of Greenville, Alabama, got a 7-mm. Winchester barrel fitted to his M-1898 Mauser action by Vernor Gipson who chambered it for the .276 Pedersen cartridge. Crenshaw covered the 22½-inch barrel with lead by fitting an inch-size water pipe over it and pouring in the melted lead. This increased the rifle weight to 15 pounds. It shoots about half-foot groups at 200 yards. With handloads of 25 grains HiVel No. 2, or of the regular I.M.R. No. 25 powder, behind the standard F.A. streamlined bullet it gives 4½ to 5½-inch 10-shot groups at 200 yards. He tried cutting off the bullet points about ⅛ inch, as sometimes suggested, but got no improvement in accuracy.

I sent a Mexican Mauser action and a light Mexican 7-mm. barrel to Vernor Gipson for the same purpose. This is an extremely light short rifle with a skimpy stock much like Crenshaw's, but with an inferior action and a slower lock time. The light short barrel was a reject. Even so, when fitted with a target scope and the barrel left free-floating, it shoots about 3-inch groups at 100 yards with F.A. 29 (Lot 21) issue ammunition in .276 Pedersen caliber. The last time out it put 10 shots in 3.05 inches. With the forestock evenly bedded in plastic wood it does not do nearly as well. I am still waiting for my G. & H. conversion job on my 7-mm. M-54 Winchester which should be more accurate.

John M. Miller of Little Neck, N. Y., tried the .276 Pedersen bullets in a 7-mm. Spanish Mauser with poor results. He said these F.A. bullets fly all around the target and rarely hit the paper. To quote him, "I never believed such inaccuracy was possible with any rifle ever made." Using the regular 175-grain bullet in the 7-mm. case and 46.5 to 50 grains of No. 4320 they all stayed in the bull at 100 yards.

.256-'06 Wildcat. Corporal Eugene Kruger gives us some dope on the .30-'06 case necked to take .256 Newton bullets. Some shooters, including Kruger, are interested in the 7-mm. made on this case which would be, too nearly, the .270 Winchester, but this one is quite different. Kruger used a target-type rifle with a heavy 32-inch barrel. His load was 50 grains of No. 3031 and the 129-grain W. C. Co. bullet. It gave 2-inch groups at 200 yards, fine accuracy at 300 yards and less drop than the .270 W. Another load he tried was 55 grains of No. 3031 with the W.T.&C.W. 100-grain bullet, which killed deer "as if lightning had hit them" and "did more damage to small game than the .220 Swift will." Corporal Kruger already has a 26-inch barrel and rifle for the .30-'06 necked to 7-mm., but he must wait until after the war to try it.

TRADE DOPE

"Hammer & Gipson," the new price list says. Vernor Gipson paid us a visit the other day and announced his partnership with Joseph A. Hammer, maker of fine barrels. Harry Pope himself endorsed as perfect the finished barrel his disciple, Joe Hammer, submitted personally. These Rifle-smiths are preparing for post-war business chiefly, but are accepting orders in the meantime on the first-come-first-served basis. Barrels are completely made from bar to finish in their shop, even including the tools. The price, up to 30 inches, is standard including any choice of twist from 1-6 to 1-24. Other barrels and jobs are also furnished, but only on direct quotations. Their list of barrels contains a formidable array of calibers. I counted nearly 70. The address is still 1934 Touhy Avenue, Chicago, Ill.

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Phenolic Trigger Shoe is a new one being brought out at a nominal price by D. Lehrer of Los Angeles. His California address is 1220 S. Grand Ave. It is about ½ inch wide and curved moon-shape with the back grooved to fit the trigger. The sample was small, light and black colored, for the Hi-Standard pistol, and designed to be cemented into place. The phenol plastic used is not restricted by priorities requirements.

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New Dexter List of eleven sheets covers a "group of exceptional arms" in the words of F. Theodore Dexter himself. He welcomes all to visit his Topeka business shop.

* * *

Gunsmiths. H. F. Oelberg of Elkader, Iowa, is still doing restocking, rebluing and reconditioning obsolete guns. H. C. Campbell, 20 Elvin Ave., Penns Grove, N. J., is doing defense work and can only promise delivery "as promptly as possible". He has given up all long jobs of remodeling and prefers to work on shotguns and handguns for police and guards. Arthur Shivell, 4323 Sunset Boulevard, Los Angeles, Calif., specializes in rebarreling (but few available now) and deluxe stocking (no checkering) also refining for accuracy. Takes only better-class of work and cannot promise delivery inside of six weeks. H. W. Quillen, Box 251, Leechburg, Pa., wants everyone to write before submitting work, because he is doing a war job and also hopes to be called. Does custom stocking except on muzzle loaders. Does no chambering, but remodels military rifles. Chas. Graybill, David City, Nebraska, does plain stocking only.

THE ARMS CHEST

THE ARMS CHEST is an open market trading post where manufacturers, dealers, professional gunsmiths, and our own readers may advertise their goods and services to fellow sportsmen at a modest cost.

Returns are uniformly excellent—scores of advertisers report truly phenomenal results.

The rate is ten cents per word *including name and address*, minimum charge $1.50.

Groups of figures are counted as one word, also usual abbreviations made up of single characters or initials. Hyphenated words are counted as two.

Non-specific phrases such as "highest prices paid" and "top prices paid" are objectionable and cannot be accepted; the terms "fair prices paid" or "state price wanted" may be used. A *specific* price must be stated on all *for sale* ads except that a phrase such as "details on request" may be used when listing *quantities* of similar merchandise or *real estate.*

Box number or blind ads will not be accepted. Please give your *complete* name and address, so as to insure the prompt delivery of all mail or telegraphic replies. All advertisements *must* be accompanied by cash. Final closing date is the *5th of the preceding* month.

Please print all advertisements *plainly*—we cannot be responsible for errors due to illegible writing. Spell out all descriptive words; abbreviations may lead to serious misunderstandings and impair the effectiveness of your ad.

We reserve the right to edit all copy to conform with our standards, and to decline or discontinue any advertisement which we consider objectionable. All orders accepted are subject to these conditions.

In describing the CONDITION OF GUNS advertised these standard phrases must be used: PERFECT means factory condition. EXCELLENT means new condition, implying negligible amount of use. VERY GOOD means practically new condition, implying little use, resulting in no appreciable bore wear and only minor surface scratches or wear. GOOD means moderate use with some finish worn off, only moderate bore wear with no pits and nothing worse than a little roughness in the bore. FAIR means reasonable hard service, reasonable wear inside, nothing worse than minor pits in the bore, implying the gun is sufficiently accurate for hunting. POOR means marred appearance and pitted or badly worn bore.

ARMS CHEST transactions are based entirely on good faith and mutual satisfaction. Deliberate misrepresentation or disregard for ordinary business ethics will, of course, result in expulsion from N.R.A. Membership and from the columns of the Magazine.

Purchasers who wish to examine, before acceptance, guns or equipment purchased thru these advertisements should request shipment by express, C.O.D. *with examination privileges.*

AMMUNITION SALES

Prices on ammunition, like everything else, are out of line. In sales approved, however, through the main source of supply, WPB, the Office of Price Administration has established prices which were in effect the early part of 1942. In recognition of these regulations, therefore, the following policy is instituted for advertising of certain types of ammunition in the Arms Chest.

No large amounts of .22 Long Rifle ammunition will be advertised FOR SALE or WANTED. Amounts up to 1,000 rounds will be allowed if prices do not exceed $10.00 a thousand. .45 A. C. P. and .30-06 Gov't Arsenal ammunition (M1 and M2) —no amounts above 500 rounds, prices not to exceed $6.00 a hundred for the former and $10.00 a hundred for .30-06.

AUCTION TYPE ADS

Advertisers must state a specific price for items excepting in cases where quantities of similar merchandise are listed. The phrase "details on request" may then be used. But efforts to circumvent this policy by advertisers requesting a higher price than that listed in their classified ads, thus encouraging auction bidding, when brought to our attention, will result in refusal of further advertising from such an advertiser and the rejection of membership renewal.

FIREARMS & SUPPLIES—GENERAL

FOR SALE

SELL OR TRADE—SMITH & WESSON MILITARY & Police, 6 inch barrel, .38 Special, excellent, $45.00. Colt Shooting Master, large Sanderson stocks, very good, $60.00. WANT—.30-'06 Pacific dies. SELL—Very good Corona portable typewriter, $50.00. Coronado portable battery radio, $20.00. A. L. Fisher, Scotia, Nebraska. 8-43

54 WINCHESTER HEAVY BARREL .30-'06, EXcellent, $80.00. Springfield .30-'06 Bull gun, excellent, $90.00. Springfield Sporter .30-'06 with G. & H. Zeiss 2¼X, good, $125.00. .276 Dubiel-Springfield, 4X Noske scope, Pacific dies, 170 cartridges and 20 empties, Circassian stock, excellent, $250.00. Sedgley-Springfield .30-'06, good, $85.00. .300 H. & H. Remington-Sukalle 30S, Zeiss 2¼ and G. & H. mount, excellent, $150.00. WANTED—Contax. Will pay cash. Smith Bros. Gun Store, Rochester, Pa. 8-43

IF YOUR MAGAZINE IS LATE!

The AMERICAN RIFLEMAN is mailed geographically, during the last week of the month preceding date of issue. In normal times all U. S. subscribers should receive the magazine on or about the first of the month.

In wartime, however, the strain on our postal and transportation systems makes it impossible to maintain normal magazine delivery schedules. While we hold to the geographical mailing, worked out in co-operation with postal authorities, delays in distribution to various sections may occur at times, although we have found that such delays are not necessarily confined to certain areas regularly. If your copy is late, therefore, we ask your indulgence. It is due to wartime conditions and beyond our control.

FIREARMS—COLT OFFICER'S MODEL TARGET revolver .38 caliber, 6" heavy barrel, perfect, $85.00. Colt Ace, .22 caliber Automatic pistol, perfect, $87.50. Luger automatic pistols, 3¾" barrel, caliber 9-mm., excellent condition, $40.00. Colt Officer's Model .32 revolver, target sights, like new, $75.00. Buffalo .32 automatic 8-Shot Spanish, excellent condition, while they last $20.00. Public Sport Shops, R-63, 13 So. 16th St., Philadelphia, Pa. 8-43

COLT ACE .22, FACTORY CONDITION, ORIGINAL box, target, extra unused magazine, five hundred High Speed cartridges, $72.00. Harry E. Mazur, 2329 Touhy Ave., Chicago, Ill. 8-43

BIG, NEW LIST—ODD LOT AMMUNITION. Single Shot Rifles suitable for Hornet, Lovell, etc. conversion. Rare Sharps Rifles and Ammunition. 10% discount to N. R. A. members. Send 6¢ in stamps. Paul Ratliff, N4912 Market, Spokane, Wash. tf

.22 OFFICER'S MODEL, IMBEDDED CYLINder, special and regular grips, excellent in and out, $54.00. Colt Detective Special, Ordnance adapter, undercut gold faced front sight, excellent in and out, $50.00. .38 Officer's Model, slight scratch in barrel, otherwise excellent in and out. Pachmayer adapter, regular and Roper grips, Roper sights, $57.00. Mossberg rifle 46B, with Mossberg 4X scope and mounts, excellent in and out, $28.00. Honed action on all guns. Colt D.A. cylinder and 5½ inch barrel, excellent in, good out, $6.00. Cash only. George Lear, 220 Arizona Ave., Atlantic City, New Jersey. 8-43

USED SHOTGUNS—ITHACA SINGLE BARREL Trap Gun, Grade 4, ventilated rib, beaver tail forend, 32" full choke, automatic ejector, perfect condition, $95.00. Public Sport Shops, R-63, 13 S. 16th St., Philadelphia, Pa. 8-43

REMINGTON 32 OVER & UNDER, 12-26" Skeet, single trigger, automatic ejectors, V.G., $125.00; Winchester 54, .30-30 Carbine, slightly shopworn, unfired, box Kleanbore, $50.00; Winchester 70-'06, Standard, Hensoldt, Klein-Dialyt, 2½ power, Tilden mounted, excellent, $175.00; Hensoldt (featherweight) 4 power Dural-Dialytan, in factory box, never mounted, $135.00; Fecker 3 power 10" Small Game, plain micrometer mounts, bases, excellent, $42.50; Weaver 29S T-mount, never mounted, $13.50; Lyman 438, plain mounts, good, $15.00; Colt New Service .45, 5½", V.G., box cartridges, $37.50. Harold Newby, 736 Garfield, Denver 6, Colorado. 8-43

MODEL-97 WINCHESTER PIGEON GRADE, hand honed, straight stock, special wood, oil finished, 28" full choke, stock 14¼" x 1¾" x 2½", perfect inside and out, first money order, $60.00. H. J. Ferry, Longmeadow, Mass. 8-43

FOR SALE—23D HORNET, REDFIELD, SCOPEblocks, and ramp, $45.00. Springfield M1-.22 L.R., Pacific ramp, $55.00. Savage 20, .250-3000, $45.00. Ithaca 37-R, 20 gauge, ribbed, $65.00. Ithaca S-20, 20 gauge double, $50.00, canvas case, others have sheepskin. Colt-Bisley .32 W. C. F., sheepskin case, $50.00. S. & W. .22 L.R. #501275, leather case, $30.00. All above are very good to excellent. Colt-Bisley #87138, D.A., .41 relic, $5.00. Fecker scope #3102, ¼" objective, 10 power, very good, $45.00. C. W. Oliver cartridge belt, excellent, $10.00. John Leisure, Agent for Estate, Box 1086, Bartlesville, Oklahoma. 8-43

TELL FREE PISTOL ROHLER STAHL BUCHEL, excellent, $100.00. .38 Special empty shells, $1.00 per hundred. New Service .45, 5½", very good, with 100 factory cartridges, $50.00. Winchester 12, Model-97, 30", full, excellent, $38.00. Harry McGinley, R.F.D. 4, Houlton, Maine. 8-43

COLT D.A. ARMY, FACTORY CONVERTED TO .38 Special, excellent in and out, honed action. Wonderful shooter, $42.00. George Lear, 220 Arizona Ave., Atlantic City, N. J. 8-43

FEDERAL EXPLOSIVES ACT

Under the Federal Explosives Act of 1941 *all* buyers, sellers and possessors of powder and primers (not complete small arms cartridges) must be licensed. Such license is usually obtainable from your County Court Clerk. Purchasers must submit their license, or a certified or photostat copy therof, to the seller at time of sale.

SEDGLEY SPRINGFIELD, BISHOP SPORTER, .30-'06, new, $75.00. Single, 12 gauge, with 300 mixed shells, $30.00. Kodak 3A Special, with complete outfit, $30.00. Baby carriage, $30.00. John Jursey, 220 Isabella, Irvington, N. J. 8-43

COLT WOODSMAN, 4½", PERFECT, FACTORY box; beautifully hand carved edge laced holster for Woodsman, both $59.00. Remington Fieldmaster, excellent, $39.00. Howard Anderson, Chenango Forks, New York. 8-43

FOR SALE—S. & W. .44 RUSSIAN, SINGLE action Target revolver, 8" barrel, blued, Roper thumbrest stocks for lefthanded shooter, also regular stocks, excellent, $60.00. Remington cal. .50 C.F. pistol, very good, $15.00. Fecker small-game scope, 4X, 18", quarter min. mounts, post reticule, excellent, $30.00. Weaver 29S, rusty outside, optically good, $6.00. Zeiss Turmon monocular, 8X, very good, $20.00. D. A. Wallace, Rutledge, Ga. 8-43

WINCHESTER 75 TARGET, PERFECT, 8X Winchester scope, B mounts, sling, Winchester 84A Extension rear peep, $60.00. Leonard Bancroft, Redfield, South Dakota. 8-43

New Classified Rates!

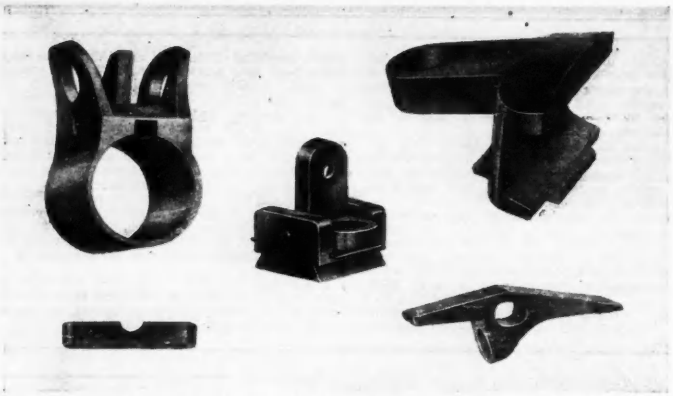
As previously announced and effective with this issue, the rate for all classified advertising will be ten cents per word, including name and address, with a minimum charge of $1.50.

Under existing conditions it is no longer possible for the Association to continue the special member's rate of eight cents per word, originally established for N. R. A. member's personal advertisements.

The present volume and scope of classified advertising makes it impossible to draw the line between personal and non-personal ads and we believe that the fair arrangement is to charge a uniform rate as is the custom with other publications. Rising publication costs make it advisable to establish this rate at ten cents per word in order to prevent loss to the magazine.

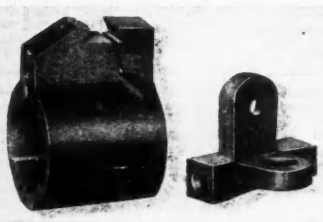
In order to further streamline the Arms Chest to meet present demands, the "Member's Exchange" and "Trading Post" classifications are being discontinued and all adds will be classified by subject only.

Sights for U. S. Carbine



Top left, Front Sight. Right, Recoil Plate. Center, Rear Sight. Lower Left, Key. Right, Sear.

U. S. Carbine
Caliber .30, M1



Block Band Foresight and Backsight for Enfield

Among the typical products that Lyman is furnishing in the emergency are the parts illustrated here. We are proud of the opportunity to assist in making this Carbine the best gun of its kind available to our soldiers.

Lyman General Catalog Free

Free folders on all products

Lyman Sights

Metallic and Telescopic Sights • Ideal Tools • Cutts Comp.

MIDDLEFIELD, CONN.

FIREARMS—WINCHESTER MODEL-95 CALIber .405, fine condition, $45.00. Public Sport Shops, R-63, 13 S. 16th St., Philadelphia, Pa. 8-43

S. & W. TARGET .44 SPECIAL, 6½", FOUR small shallow pits in barrel, V.G. to excellent inside, V.G. outside, complete .44 Special Ideal reloading tools, Ideal Mould, 200 primers, half pound can of Bullseye, 175 empty cases, all excellent, sell as complete unit, no splits, $70.00. Money order. Lester Polzin, Route #2, Cornell, Wisconsin. 8-43

SEDGLEY-WINCHESTER S-S, .219 ZIPPER, fired only for sighting, 1½" Fecker 12X, leather scope carrying case, all excellent to perfect, very accurate combination, 235 cartridges, $225.00. 100 copies AMERICAN RIFLEMAN, $10.00. R. W. Seasholtz, 1204½ E. Market St., Sunbury, Pennsylvania. 8-43

DWM LUGER, .30 CALIBER, 3¾ INCH BARREL, fair inside, good outside, new breech, holster, 200 rounds fresh Western ammunition, $45.00 complete. Collector's item: World War I Mauser automatic pistol, chambered for 9mm. Luger, excellent inside, very good outside, slight holster wear, fired only 100 rounds, 50 rounds fresh Winchester ammunition, loading clip, $60.00. Dr. Joseph Shor, 4941 Monument Road, Philadelphia, Pa. 8-43

WINCHESTER 70 HORNET, 48 WRS, SCOPE blocks, sling, case, Lyman Jr. 6 power, scope case, Lyman tool, etc., loading block, 700 Sisk, 35 to 41 grs., 300 handloads, 1 lb. 2400, 3000 primers. Factory condition, $225.00. Edward Oliva, 207 San Juan Avenue, San Francisco, Calif. 8-43

1 PIECE BRASS CLEANING RODS, .30 CALIber 98¢. 45 Automatic cartridges, $6.00 per hundred. Used Gov't rifle sling straps, 1¼ inch, 50¢. 1¼" size rifle swivels, 65¢ pair. Passon Inc., 507-509 Market Street, Philadelphia, Pa. 8-43

FOR SALE—M-70 HORNET, EXCELLENT, high comb custom stocked, few cartridges, components, $95.00. J. C. Gribben, 5622 Enright, St. Louis 12, Mo. 8-43

SPECIAL SALE OF NEW AND USED SHOTguns and rifles. List ready. Stamp please. Kimball Arms Company, Woburn, Mass. tf

WINCHESTER M-40 AUTOLOADER, 12 GAUGE, 28" modified, perfect condition inside and outside, except very slight scratch on stock, $65.00. Colt .45 Automatic, government issue, perfect inside and mechanically, very good outside, $45.00. No telegrams. R. J. McFeeter, 76 So. 10th Street, Newark, N. J. 8-43

STEVENS DELUXE .22, CLIP MAGAZINE, cheek rest stock, checkered, pistol grip cap, rear peep, ramp front, hood, Whelens sling, new Weaver 29S, post, mounted, both perfect, new condition. $40.00. Money order only. J. E. Wellington, Box 223, Wellsville, Ohio. 8-43

LARGE STOCK OF AMERICAN AND EUROpean Antique Arms. Send 10¢ coin for latest 9th edition catalog, featuring the important Dr. Buck collection. Antique arms wanted. We buy single pieces or whole collections. Fair prices paid. Kimball Arms Co., Woburn, Mass. tf

FOR SALE—5000 .38 S. & W. SPECIAL, 150 grain wadcutter bullets, sized and lubricated, $7.00 thousand; also 115 grain at $6.00. .32 S. & W. Hammerless, blue, good, $25.00. Fiala pistol with rifle barrel, stock, and two pistol barrels, good, collector's item, $35.00. Roy Vail, Warwick, N. Y. 8-43

FIREARMS—WINCHESTER MODEL-21, 16 gauge, double barrel shotgun, 28", full and modified, selective ejection, brand new, $111.00; Winchester Model-21, 12 gauge, double barrel shotgun, automatic ejectors, 30", full and modified, brand new, $94.35; Savage repeating rifles, Model-99EG, caliber .303 and .250-3000, brand new, priced at $65.00 each. Public Sport Shops, R-63, 13 S. 16th St., Philadelphia, Pa. 8-43

FOR SALE—7.62 RUSSIAN ISSUE, GOOD CONdition, $20.00. .45 Springfield and 50 rounds, $10.00. New Model 50 Mossberg stock, $3.50. 500 rounds .30-'06 sub loads, $25.00. F. Krupp, 59 Cypress St., Charleston 23, S. C. 8-43

COLT WOODSMAN, PERFECT IN, EXCELLENT out; Winchester 62, pump .22, excellent; Iver-Johnson Sealed Eight target revolver, excellent, .22; 1000 Long Rifles. Sell as unit only, $115.00, money order. Adrian Solo, 174 Highland Avenue, Somerville, Mass. 8-43

LATE COLT .32-20, $25.00; LIGHTNING 41, fair, $11.00; H. & R., .44 American, fine, $6.00; Springfield .45-70, good, $11.00; another, fair, $6.00; heavy Kentucky rifle, $10.00; fine 20 single, $7.50; Kodak film tank, $5.00; 100 sporting magazines, $5.00. Ralph Drake, Osborne, Kansas. 8-43

SMITH & WESSON, HEAVY DUTY .38-44, BLUE, 5-inch barrel, as new, fired seven times, with two boxes ammunition, $75.00. Match Target Woodsman fired not over 200 rounds, otherwise as new, original box with target, 200 rounds ammunition, $75.00. Remington Enfield, restocked sporter, .30-'06, Lyman 48G and Springfield front sights, 26 inch barrel, pistol grip and forearm checked, genuine buffalo P. G. cap and aluminum buttplate, fired probably 200 times on rifle range, 200 rounds ammunition, perfect, $55.00. Harry L. Harner, Nevada, Missouri. 8-43

COLT WOODSMAN 6½", PERFECT, SHEEPskin holster, $55.00. High Standard, same, $45.00. Colt .38-40 New Service, excellent, $45.00. Frontier .38-40, some pits, belt holster, $35.00. Winchester 74, Lyman 57 and 17A, sling swivels, perfect, $40.00. Write for shotgun list. R. S. Cook, Alpena, S. Dak. 8-43

EXCELLENT WINCHESTER MODEL-12, 16 gauge, choke and cylinder barrels, believe Pigeon grade, nearly full case shells, $185.00. Excellent Winchester Model-42, .410 gauge, Skeet grade, full case shells, $110.00. C.O.D. express, examination privileges. A. D. Price, C. Sp. (G), Station Ordnance, Naval Air Station, Melbourne, Florida. 8-43

WINCHESTER 52 H. B. "MARKSMAN", ROUND receiver, Vaver sights complete, with barrel band. Lyman 15 power, Super objective, Targetspot scope, gun and scope perfect in, excellent out. 1000 match cartridges. All for $187.50. Remington Model-81 "Woodsmaster" .35 caliber automatic, excellent, three boxes cartridges. All for $88.10. Walla Fish, Snyder, Texas. 8-43

FOR SALE—NEW .30-'06 REMINGTON MODEL .30, bolt action, 48W rear, gold bead front sight, price $75.00. Edward J. Prue, 20 Edward St., Malone, N. Y. 8-43

REMINGTON SPORTSMAN 20 GAUGE, 26 INCH barrel, improved cylinder, $60.00. .44 Special, Bisley Colt, six inch barrel, box of shells, $45.00. Savage Model-99 Carbine .30-30, box of shells, $50.00. Winchester Model-1905 Automatic, .35 caliber, 40 shells, $30.00. Ithaca double, 12 gauge, full & modified, box of shells, $30.00. Krag, cut down, barrel 22 inches, with 16 shells, $22.00. Winchester Model-94, .38-55 with box shells, $25.00. Winchester Model-94, .30-30, barrel cut to 20", with 10 shells, $25.00. Several hundred .30 caliber, 150 & 172 grain metal cased bullets @ $1.50 per hundred. Several hundred .38 Special empties @ 75¢ per hundred. Marlin Late Model .32 Special, with 12 shells, $35.00. Money orders please. No C.O.D. Carl W. Hayden, 119 Brentwood St., Portland, Me. 8-43

.45 AUTOMATIC COLT PISTOL, GOVERNMENT Model and holster, excellent or better, $60.00. .45 S&W 1917, Government Model, new condition, $45.00. E. H. Abbott, Johnsonville, N. Y. 8-43

FOR SALE—VERY GOOD SAVAGE 23D HORNET, Lyman 438 scope, crosshair, click mounts. Trigger worked, forearm, grip checkered and dressed down. Oil finish. Excellent care. Two boxes cartridges, $55.00. H. W. Burch, Morrison, Illinois. 8-43

SPRINGFIELD SPORTER, DELUXE CUSTOM stock, checkered, monel metal inlays, two contrasting grip caps, foretip, cheekpiece, polished bolt, new reblued Enfield barrel, hooded ramp front, Redfield receiver, Weaver 29s all mounted, sling, excellent, very pretty, $100.00. Colt Woodsman 4½ inch, excellent, some blueing wear, two magazines. $40.00. Harley I. Larson, Rushford, Minnesota. 8-43

FOR SALE—1 REMINGTON NO. 37 WITH Micrometer sights, 15 power Lyman Super Targetspot, good supply Palma Match $250.00. 1 Set matched Smith & Wesson, .22 and .38 Special with stag handles, hand tooled belt and holsters with silver mountings and trim, 1 box .38 Special, good supply Kleanbore, $185.00. 2 Colt Woodsmans, good supply Kleanbore with each, $80.00 each. All of the above very good to excellent. 1, 65-mm. B&L spotting scope, excellent, $100.00. 2, 9-mm. Lugers, 8 inch barrels, with 1-7.65 barrel extra, good, set $125.00. D. J. Wilson, Logan, Utah. 8-43

FOR SALE—LUGER PISTOL, THIRTY CALIBER. Condition, very good. Twenty two rounds ammunition. Nice holster. $37.50. H. Carmichael, 395 Houston, Coalinga, California. 8-43

WEAVER 330S, NEW, $32.00. REDFIELD JR., Model-70 Weaver Mount, new, $10.00. E. G. Pope, Lubbock, Texas. 8-43

.30-'06 ARMY, FINE HAND-RUBBED STOCK, sporting, heavy aluminum butt plate, issue stock extra, issue sights, very good in and out, slight barrel rub, one box hollow-point ammunition, $88.00. New Warner Infallable .32 automatic pistol, made by Davis-Warner, Assonet, Mass., two clips, new holster, one box ammunition, pistol shooters instruction book, never fired, in factory box, perfect, $48.00. WANT —Winchester 70 Hornet. Roy Bakkum, Waukon, Iowa. 8-43

SALE—M-70, .300 MAG., NOSKE SCOPE, Redfield mounts, side safety, Redfield No. 70 rear, custom stock & sling, excellent, 45 factory, 54 reloads with 150 grain W.T.C.W. bullets, 1270 primers, 900 gas checks, 169 grain mould, Ideal sizing die, 1 pc. dural rod, Pacific tool & dies all for $255.00. Sold as unit only. Ralph Thomas, 1540½ Sherbourne Dr., Los Angeles, Calif. 8-43

WINCHESTER 70, TARGET GRADE, .220 SWIFT, excellent, superbly accurate, buttstock shortened one inch, 160 factory cartridges, 32 handloads, 200 primers, 200 bullets, $150.00. K-22, excellent, sheepskin case, 500 Long Rifles, $75.00. Woodsman 6½", excellent, stag grips and regular, sheepskin case, 500 Long Rifles, $65.00. Harold Newby, 736 Garfield, Denver 6, Colorado. 8-43

WINCHESTER MODEL-70, STANDARD, CALIber .250-3000, new, $78.45 and four boxes ammunition $1.75 each. Walla Fish, Snyder, Texas. 8-43

REMINGTON FIELDMASTER .22, EXCELLENT to perfect, Savage pump .22, Model-1914, fair, accurate, 350 rounds new greased Remington Long Rifle. All for $55.00, express collect. Wm. Rouse, 334, 59 St., Newport News, Va. 8-43

.30 REMINGTON AUTOMATIC RIFLE, PERfect in and out Model-8A, 6 boxes of ammunition, price, $80.00. Marlin 20 gauge pump, perfect in and excellent out. Model-44, price $43.00. Smith & Wesson .44 Triple Lock, 6½", target sights. Brand new condition, shot 1 box shells. Price $80.00. 11 boxes .220 Swift Mushroom, price, $44.00. 7 boxes .30 Winchester, Model-1894 soft point, 170 grain shells, price $50.00. Charles Leasure, Jr., 181 W. La Clear Ave., Youngstown, Ohio. 8-43

MANNLICHER-SCHOENAUER .30-'06 SPORTing, 24", Hensoldt 2¾X, Niedner mount, 100 cartridges, $250.00. Springfield Sporter, Niedner 26" target barrel 48-17 & blocks, $100.00. Original .30 Newton, Redfield receiver, Niedner scope base, Schmitt dies, 525 bullets, 172 grain, 500 primers, 80 new cases, 20 factory loads, $110.00. Colt .357 Magnum 4", extra cylinder and crane for .38 Special, 60 Magnum cartridges, custom job on O. P. frame, $125.00. Luger 9mm. 8", cartridges, $50.00. Hoffman .375 Magnum Mauser, 26" elaborately engraved and gold inlaid, engine turned, checkered bolt, trap for sight, Vienna leather case, $400.00. Hensoldt, 6 x 30 binocular, Dialyt, $100.00. G. & H. .30-'06 Springfield Sporter, leather case, $190.00. All excellent to perfect, 16X Megaphos monocular, optically perfect, leather fair, $35.00. .380 Savage automatic, very good, cartridges, $25.00. William A. Schutte, 405 South Sixth St., Minneapolis, Minnesota. 8-43

REMINGTON, 12 GAUGE, MODEL-10, EXCELlent. $50.00. Smith & Wesson .32 Revolver, Third Model, antique, $7.00. Music box, six songs, antique, $42.00. Hamilton R. R., 18 S., 21 J., $26.00. Hamilton 974, $24.00. Longines, $22.00. Elgin, $20.00. Illinois Master, $20.00. All 17 jewels, 16 size, open, excellent. Binoculars, Hunter 8 X 30 like new, $56.00. Colmont 8 X 24, $42.00. 6 X 30 Bausch & Lomb Army, $66.00. 6 X 25 Bausch & Lomb, $58.00. Field glasses, famous 08 Army, Spindler & Hover, $18.00, Busch, $26.00, Zeiss, $32.00. Optically, mechanically perfect, add 10% tax. Paul Schweer, Donnellson, Iowa. 8-43

argus in Action

"INSEPARABLES"
CAPT. EDWARD JACQUET
U. S. AIR FORCE
and his Argus C3

"Argus C3 and My .45 Were My Constant Companions"

THIS CAMERA has given very remarkable service. It has gone through twelve bombing and/or strafing raids by the Japanese but has also been on forty-three bombing raids against the enemy. Most of these raids were run from high altitudes in the Flying Fortress type of airplane at sub-zero temperatures. Naturally, the camera received a few blows here and there but stood up under the strain. The flash bulb equipment was lost and destroyed at Clark Field by fire. Bullets and shell fragments have only come close but never hit it. The camera plus a "forty-five" have been my only and constant companions during these campaigns. They were things I considered valuable during the evacuations of the Philippines and Java.

EDWARD M. JACQUET
Captain, Air Corps
(19th Bombardment Group)

"FINE WORK"

Men and women of Argus, Plant 2, Lens Division, who have just been awarded the Army-Navy "E" for fine work in vital war production in the manufacture of critical optical instruments.

"Good Pictures"

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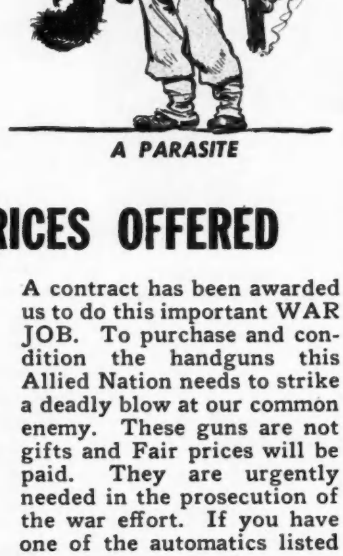

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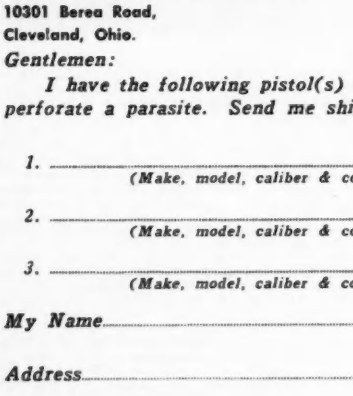

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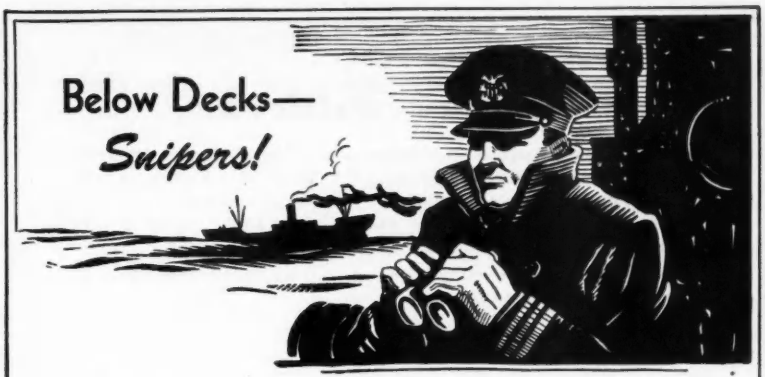

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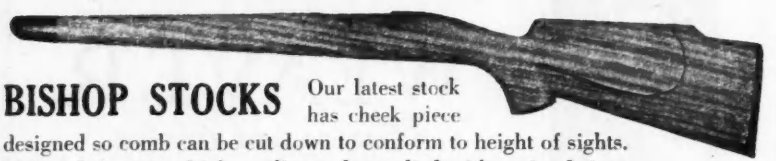

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FOR SALE—.38 SUPER AUTOMATIC. CARtridges, extra clip, etc. Fine, $65.00. Calvin Goddard, 3533 Quebec, Washington, D. C. 8-43

S.&W. .357 MAGNUM, 3½ INCH. ALUMINUM adapter, slight blue wear at muzzle, excellent, $115.00. Matched pair Official Police Target, .38&.22, 6 inch. Colt-King-Super Target V Rib, Reflector front, King Micrometer rear. Double cockeyed hammer. King action, Target grips, excellent to perfect, $250.00. S.&W. K-22, excellent, $60.00. Colt .38 Super Automatic, perfect, $75.00. Ammunition $3.00 with gun. S.&W., .38-44, 5 inch, Magnum grips, excellent, blue, $65.00. S.&W. .38-44, Magnum grips. Completely engraved. Blue, 5 inch, excellent to perfect. Slight blue wear at muzzle, $90.00 Matched pair S.&W. .44 heavy duty, 5 inch engraved, belt and holsters, stag grips, excellent, slight blue wear, $190.00. Colt S.A. 45 Bisley, 7½ inch, perfect, $50.00. S.&W. Hammerless, .38, 4 inch, blue, excellent, $25.00. Send stamp for complete list of 12-16-20-.410 gauge automatics, pump guns, double barrel, single barrel, rifles, and scopes. 5 cases 16 gauge shells (2½-1-4) at $50.00 per case. 5 cases 12 gauge, No. 4 shot, $55.00 per case. W. J. Bath, 308 West Pecan Street, Independence, Kansas. 8-43

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FOR SALE—PARKER G.H.E. 20 GAUGE SKEET gun, V.G., $140.00. D. A. Decker, 209 North Federal Ave., Mason City, Iowa. 8-43

300 YARD CHUCK OUTFIT. W70, .220 SWIFT, medium heavy barrel, target scope blocks, Jostam cheek pad, fired 172 rounds mostly hand loads, excellent. Junior Targetspot 8X, ½ inch Dot reticule at 100 yards, perfect. 1,000 primers, 1,000 jacketed bullets, 6 lbs. No. 4320, 74 P.S.P. 48 grain factory loads, 50 empties, Ideal hand tool with neck and full size dies, Ideal powder measure, Pacific scales. All equipment originally purchased new. Complete outfit, $250.00. Components not sold separately. Connie Malinowski, So. Deerfield, Mass. 8-43

FOR SALE—WINCHESTER MODEL-64, .30-30 rifle with Special deluxe stock, checkered pistol grip and forearm, and 24 inch barrel for $65.00 Cash with 30 cartridges. Condition excellent inside and out except for handling wear on action. Also Model-25 Remington, .25-20 repeating rifle for $35.00 Cash with 125 cartridges. Condition excellent and guaranteed or money refunded. Grant Pierce, Bald Mountain, Maine. 8-43

SELL—9-MM. EAGLE LUGER, 95 CARTRIDGES, reloading tool and mould, good $50.00. .22 L.R. Winchester, Model-75, good $25.00. 12 gauge Winchester Model-11 automatic, full, good, $45.00. .30-'06 Star Gauged match Springfield, good $50.00. .45 S&W, Model-1917, holster, 230 cartridges, good, $40.00. .22 L.R., Peterson heavy 24 inch barrel fits Ballard centerfire action, extractor, forearm, good, $20.00. Marlin Model-1892, .32 L.R.F., barrel good, action won't repeat, relic, $10.00. Heavy Niedner .30-'06 barrel, stock, B.S.A. front sight $20.00. 30X French spotting scope, good, $15.00. WANTED—S&W K-22 Masterpiece. Ranger Over & Under 20 gauge, .30-30. Marlin Over and Under .410 gauge. Bee or Hornet good or better, priced reasonable. Life Member N.R.A. Max Wagner, Alexandria, Minn. 8-43

HUNTER ARMS, CUSTOM BUILT 12 GAUGE, single trigger, automatic ejector, Whitworth barrels, beaver forearm, A2 as Premier graded, highly engraved, good inlay, excellent $375.00. Parker A.A.H. regular ejector, double trigger, V.G., $275.00. Francotte Knockabout, 20-26, V.G., $100.00. Ainsley H. Fox, B grade 12-28 inch, V.G., $75.00. Fox Sterlingworths-35-45-$50.00. Iver Johnson, as new 12-30 inch, $45.00. Remington 20 gauge Sportsman, 2 barrels, V.G., $90.00. Remington, 12-28 inch Sportsman, excellent, $60.00. Winchester, 20-26 inch, Mod. 12, V.G., $55.00. Winchester, 12-30 inch, Mod., 12, V.G., $55.00. Ithaca Western, 16-28 inch, V.G., $25.00. Ithaca Field, 12-32 inch, good, $35.00. Remington Mod. 81, .300, excellent, $95.00. Remington Mod. 81, .35, excellent, $90.00. Winchester 54, N.R.A. stock, .250-3000, 48 W. rear, excellent, $95.00. Westley Richards .303 British Sporter, $250.00. Winchester .401 Automatic, Lyman rear, excellent, 4 boxes shells $85.00. Savage 99 G, take-down, .300, strap and swivels, excellent, $75.00. Savage 99, .300 solid frame, Lyman rear, V.G., $60.00. Savage 99, .22 Hi Power take-down, checkered, Lyman rear, V.G., $50.00. Winchester 94 rifle, .30-30, octagon barrel, take-down, V.G., Lyman, $50.00. Winchester High Wall Hornet, Single Shot, fancy fiddle back, cheek piece stock and forearm, Lyman windgauge sight, 17A front, job by Gebby, excellent, $50.00. Parker H. 12-30 inch, V.G., $60.00. Winchester 12-16-28 inch, excellent, $65.00. W.W. Greener 12-30 inch, V.G., $275.00. Winchester 94 Carbine, excellent, .30-30, two boxes shells, $50.00. Remington 37, Miracle trigger, Vaver rear Redfield front, sling, excellent, $90.00. Winchester 52 Speedlock, battle rear, 17A front, sling, V.G., $60.00. Savage Utility guns 20 gauge and Hornet 12 gauge and .30-30, New, $30.00. Winchester 61 pump, New, $39.50. Remington 241, .22 automatic, Weaver scoped, excellent, $65.00. H.&R., 20 gauge folding gun, V.G., $10.00. Marlin 39, .22 lever action, V.G., Lyman rear, $30.00. K-22 S.&W., V.G., $65.00. Savage .380 and holster $30.00. Savage .32 and holster $25.00. Ortgies .32 and holster $30.00. Colt .32 and holster, $30.00. H.&R. Sportsman as New, $35.00. S.&W. .38 Special, pearl grips, .4½ inch barrel, excellent, $60.00. S.&W. .38 squeeze grip, Safety Hammerless, Pearl grips, V.G., $30.00. Colt .38 Officer's Target, 7½ inch barrel, V.G., $50.00. Iver Johnson .32 Hammerless, V.G., $10.00. S.&W. .38 hammer, V.G., $15.00. 2 Cutts tubes, full and Mod., $5.00. 1 Cutts tube, Alumnium, Mod., $4.00. 1-.45-70 Ideal tool, $5.00. 1-.38-56 Ideal tool, $3.50. 8 power French binoculars, $35.00. 100-7.63 Mauser pistol cartridges, $8.00. 50-.35 S.&W. pistol cartridges, $4.00. 80-6.5-mm. rifle cartridges, $10.00. 100-.25-35 soft point, $10.00. Single barrel shot guns, $5.00 up. Will take .22 Long or Long Rifle cartridges or 12 gauge shells 4-6-7½-2 in trade, will buy, tell me what you have. Send M.O. or cashier's checks. Wanted—Level wind fishing reels, state make and price. N. R. A. member. Harry L. White, 13 Church Street, Burlington, Vt. 8-43

LATEST WINCHESTER 52 BULL GUN, FECKER tube sight, detachable hood, single shot adaptor, sling, aluminum buttplate, checkered grip, 1000-.22 L.R. Kleanbore, perfect, $110.00. Mannlicher-Schoenauer 8mm. model 1908, perfect except for small deep scratches where barrel goes into receiver, $100.00. B.S.A. Martini converted to Hornet, severely plain stock, blue faded on barrel, inside excellent, Souther 5 power shock-proof scope, Lyman mounts, 200 rounds ammunition, complete outfit $110.00. Winchester 94 Carbine, excellent, $39.50. Marlin 1893 Carbine .38-55 and beauty, perfect $35.00. Remington 7.62 Russian, refinished checkered stock, turned down bolt, no sights, 3 boxes ammunition, excellent $25.00. Winchester 53, nickel steel, .32-20, checkered stock, Marbles open sights, 50 rounds ammunition, a beauty, $38.00. No deliveries before August 15. WANTED—Bankers 38. R. E. Bradberry, 464 Washington St., Quincy, Mass. 8-43

PERFECT '86, .45-70. CARTRIDGES, TOOLS, components, $40.00. Fecker 10", 4X, $32.50. Hornet cartridges, $3.50 box. Case 12-16 Skeet $37.50 each. New Lyman W.J.S. $10.00. 56A, $6.00. Parker-Hale .22 rod, 4 tips, $2.00. Complete descriptions for stamp. E. D. Adams, 6310 Clayton Road, St. Louis, Missouri. 8-43

REMINGTON AUTOMATIC MODEL-11, 12 gauge, full, 28 inch barrel, very good, mutton leg case, $50.00. W. H. Krimmel, 580 Meadowland Ave., Kingston, Pa. 8-43

EXCELLENT .38 S.&W. OUTDOORSMAN, KING grips, Berdon Action, holster, 6½ inch barrel. First Money Order $75.00. 9 boxes Factory shells $3.00 Box, with gun. Amos C. Wells, Route 4, Albany, Oregon 8-43

.45 COLT AUTOMATIC, COMMERCIAL WITH Heiser holster, extra clip, excellent out, very good in, $40.00. 3 boxes Remington .45 Automatic, $9.00. 260 F. A. 1929, .45 Automatic, $7.80. 125 U. S. cartridges Co., .45 Automatic, $3.75. 3 boxes 12 gauge Remington, 7½C, $3.75. Case Remington 20 gauge Skeet, $23.00. 81—.30-'06, F. A. '27 & '31 and 43 blanks, $4.00. 43—.38 Automatic, Peters smokeless, $1.00. 300—.22 Short, 150—.22 Long semi-smokeless, 110 .25 Stevens rimfire, $1.50. Complete bait casting outfit including $10.00 Pfleuger Summit reel, South Bend rod, line, lures, all excellent, $15.00. Complete bass bug fly rod outfit including, $12.00 South Bend rod, aluminum case, reel, line, lures, very good, $15.00. Nine foot bass fly rod with aluminum case, excellent, $4.00. Eastman Vest Pocket Kodak, excellent $6.00. Tennis racquet cost $8.00, with metal press, very good, $3.00. R.C.A. portable radio-victrola, works very good, case good, $12.00. New dynamic twelve inch radio power speaker with carrying case cost $33.75, sell $27.00. Old style kerosene lawn lantern thirty inches high, copper painted black, complete with eight foot post and inner lamp, excellent $20.00. Women's shoe skates, size 5½, good, $2.00. Any item transportation charges collect. L. F. Clark, 169 Rogers Avenue, West Springfield, Mass. 8-43

COLT OFFICER'S MODEL .22 CALIBER REvolver, perfect inside and out, target sights, special grips, $75.00. COD. Walnut Hill No. 417, heavy barrel, .22 rifle, aperture front sight, Lyman tang rear sight, perfect inside and out, $65.00, COD. Major Wm. Scanlon, Station Hospital, Camp Barkeley, Texas. 8-43

NEW REMINGTON 24A AUTOMATIC, CHAMbered shorts only, 750 shorts, $40.00. Winchester Model-12, 28 gauge, 500 shells, $85.00. I. J., .22 Supersealed eight, $32.50. Savage Utility .30-30, 20 gauge, perfect, box .30-30's, $28.50. Winchester 12-12-28", solid rib, Poly Choke, pad, case, $85.50. 3000 rounds .22 Super-X Long Rifle shot, $15.00 M. Ernest Juola, Eveleth, Minnesota. 8-43

S. & W., 1917 ARMY, PERFECT, 60 ROUNDS, $45.00. S. & W., .44 Russian Target, S. A., perfect, $35.00. Krag rifle, perfect, $35.00. Winchester '73, .38-40, $20.00. Winchester .22 L. R. light action, 28" octagon, $20.00. Ballard .22 R. F., pistol grip, 24" octagon, $25.00. Sharps .40 C. F., double set, heavy octagon, $25.00. Winchesters, Ballard, and Sharps are all perfect except bores, fair. W. J. Rivers, 518 Ashby St., S.W., Atlanta, Georgia. 8-43

.45 COLT S. A. A., 5½ IN. BARREL, SPECIAL grips, 50 cartridges, good, $45.00. .38 Colt Lighting, 4½ inch barrel, ejector, nickeled, good, 50 cartridges, $25.00. Both mechanically perfect. Archie Fisher, Montville, Connecticut. 8-43

WINCHESTER 52 HEAVY BARREL, EXCELlent, stock shortened, Lyman 10X Targetspot scope, 17A, 48J. First $125.00. Money order. E. F. Otto, R.F.D. #4, Box 1675, Everett, Washington. 8-43

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FOR SALE—TWO KRAG SPORTERS, REMODeled stocks, both above average, $25.00 and $30.00. .30-'06, 1938 boattail, $10.00 a 100. A large amount of heavy reloaded .30-'06 and .30-40 good for hunting, also Hornets, Sisk. Arthur H. Hanson, 2715 Wood, Kanssa City, Kansas. 8-43

SELL—.38-40 NEW SERVICE, 5½", BLUE, EXcellent, $40.00. .38 Merwin & Hulbert, 3½", blue, new, $35.00. .32 Merwin & Hulbert, 3½" & 5", blue, 2 barrels, new, $35.00. .22 O.M.T., Patridge sights, 6", good, $50.00. .22 Police Positive Target, 6", new, $50.00. .22 Colt Woodsman, 6½", new, $65.00. .32 O.M.T. Heavy barrel, 6", Roper grips, Roper front sight, like new, $70.00. .45 S. H. Colt Original blue, 5½", excellent, $40.00. .38 S.&W., M. & P. Target, 6½", excellent, $65.00. .38 S. & W., M. & P. Target, 6½", has wrench marks on barrel, good, $45.00. .30-'06 Remington 30-S and 50 cartridges, fired 200 times, excellent, $55.00. .30-30 Savage, 99 Takedown, 20 cartridges, slightly shopworn, never fired, new, $50.00. .30-30 Marlin Safety, 26" Octagon barrel, with 20 cartridges, good, $30.00. 16 Gauge Batavia 26" Double, good, $30.00. W. M. Perry, Columbia, S. C. 8-43

BUY WAR BONDS! DERRYHOVLE HOUSE, Natick, Mass., offers: .300 Magnum Buhmiller Bull Pup; Savage .219 Hornet; Stevens Model 76, .22 automatic; 7.62 Russian Sporter; .38-55 Winchester 94; Remington Hepburn .32-40; Frank Wesson .44 caliber target rifle; Syracuse 15 gauge double. Ammunition with all of the above. Mercury Univex camera, F.2 lens, with accessories. Prices on request. For the duration we are a commision house. 8-43

WINCHESTER 52, CUSTOM STOCK, VAVER Dial micrometer rear, Redfield globe front, also Lyman 438 scope, mounted in ¼ minute click mounts, bore perfect, outside near excellent, sheepskin case, 300 rounds of Long Rifle ammunition, outfit, $75.00. Boyd Taylor, 821 Monmouth Street, Newport, Kentucky. 8-43

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FOR SALE—D.C.M. SPRINGFIELD SPORTER No. 1270336, very good stock, new barrel, scope blocks, extra cocking piece, Heiser solid leather case, $85.00. Remington 30 Express, caliber .30-'06, new barrel, rest very good, Lyman receiver sight, Noske 2½X scope, Stoeger side mount, $110.00 with all leather case. Gaumont Folding 6 x 13 Stereo Camera, $40.00. Another Stereo with box magazines and many extras $125.00. Both have Krauss Zeiss lenses. Bell-Howell movie outfit, 16mm, complete, extras, $250.00. Colt Woodsman 6½", bluing worn, bore excellent, trigger stop, Heiser holster, 3 magazines, $32.00. E. C. Helwig, 1092 Van Antwerp Road, Schenectady, N. Y. 8-43

WINCHESTER 42, .410, 26" BARREL, FULL, perfect, two boxes shells, $52.00. Remington Model-241 Automatic Long Rifle, perfect, 500 rounds Long Rifle, $50.00. Rufus Anderson, Seward, Nebraska. 8-43

GERMAN MAUSER .30-'06 SPORTER, VICKERS barrel, Springfield Sporter stock, Lyman 48 rear sight, good condition, $50.00. F. O. Parker, 1836 42nd St., Rock Island, Ill. 8-43

.38-40 BISLEY, PERFECT, STAG GRIPS, 25 rounds, $45.00. .38 Colt Military automatic, 6", Franzite pearl grips, perfect, 100 rounds, $44.00. High Standard Model-B, 6¾", Patridge target sights, factory condition, 150 rounds, $55.00. 45 Colt automatic, perfect in and out, Franzite grips, holster, 150 rounds, $55.00. J. L. Shull, Tyler, Texas. 8-43

NEW REMING PUMP, .35 CALIBER, BOX shells, $70.00. Winchester Model-12, 12 Gauge Trap, ventilated rib beavertail fore-end, very good, 6 boxes shells, $100.00. Dr. Jos. Renouf, 8 Livingston Block, Kent, Ohio. 8-43

.22 BALLARD, ENGRAVED ACTION, DOUBLE set trigger, beautiful stock, Peterson barrel, very accurate, $100.00. .357 New Service, 4 inch, shells, $65.00. .22 2-R, Krag action, new Savage barrel, $25.00. 8mm. Keystone movie camera f2.7 lens, case & film, $40.00. J. D. Jamieson, 1612 Garfield St., Denver, Colorado. 8-43

FOR SALE—KRAG SPORTER, 24" BARREL, very good, $25.00. American Rifleman, 1934 to 1943, 29 other copies date back to 1929, $10.00. Decapping tool, $4.00. W. Crowley, 6541 Greenview Ave., Chicago, Illinois. 8-43

FOR SALE—MODEL-70 WINCHESTER SUPER Grade, .30-'06, Lyman Alaskan, Griffin & Howe mount, Lyman 48 rear, King front, folding leaf on barrel, Tilden safety, trigger shoe, sling, recoil pad, Custom built stock, excellent in and out. Ten boxes of ammunition. $200.00. Otto Flynn, 709½ Wallace, Clovis, New Mexico. 8-43

.38 SUPER AUTOMATIC, CARTRIDGES, EXTRA clip, etc. Fine, $65.00. Calvin Goddard, 3533 Quebec, Washington, D. C. 8-43

9-MM LUGER, 8" BARREL, VERY GOOD, 195 Kleanbore, holster, $55.00. 12 gauge Marlin Over & Under, excellent, 28" modified and full, recoil pad, oak leaf-acorn carving, over 100 shells, case, $55.00. Robert Quigley, Lyndonville, N. Y. 8-43

FOR SALE—S. & W., D. A. .45, U. S. ARMY 1917, excellent to perfect, fired 20 times, with 80 rounds full patch ammunition, 20 clips, righthand U. S. leather holster, all for $60.00. 250 Winchester .220 Swift cases, fired once, $5.00. W. R. Welling, Warwick, N. Y. 8-43

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.357 MAGUNUM, S. & W., 3¾ INCH BARREL, factory new, special sights, with two boxes ammunition and hand tooled leather holster, $150.00. .45 Colt Automatic, pearl grips, excellent, $65.00. Two .45 Colt Automatics, $45.00 and $50.00 each. .380 Colt Automatic, new, $30.00. .32 Colt Automatic, good, $25.00. .32 Mauser, pocket model, $25.00. .25 Colt Automatic, $25.00. .30 Luger, excellent, original Berlin case, $60.00. .30 Luger carbine, poor, make good collection item, $45.00. .22 Colt Match Target, new, $65.00. .22 Colt Woodsman, $45.00. .38 Special Officer's Model, 6 inch barrel. $65.00. .38 Special, S. & W., 6 inch barrel, $50.00. .41 Remington double barreled Derringer, pearl grips, with one box ammunition, $25.00. .32-20, .38 and .44-40 Colt Frontier single actions, very good, $50.00 each. .32 S. & W. top break, good, $20.00. .38 Iver Johnson blued steel hammerless, good, $15.00. Also Colt cap and ball and other antiques. List on request. Elliott Gillespie, 4816 S. Aldrich Ave., Minneapolis, Minn.

GUARANTEE MONEY RETURN IN 5 DAYS. No C.O.D. Send permit with order. Pair Smith & Wesson, K-22, 38, excellent, 500 rounds, holster, rods, $150.00. Webley .455, very good in & out, 50 rounds, holster, $30.00. Woodsman 6¾ very good out, excellent in, 300 rounds, $50.00. .22 Smith & Wesson S.-S., 8", excellent in, good out, 300 rounds, $32.00. H. & R. .22 Special, 6", new condition, holster, 300 rounds, $33.00. S. & W. .38 Special 4", heavy frame, excellent, 300 rounds, $60.00. Colt .38 P. Positive 4", almost new, fine holster, 200 rounds Peters, $45.00. Colt .32 P. Positive, 4 inch, almost new, fine holster, 200 rounds Longs, $40.00. Colt .32 Automatic, very good in & out, holster, 50 rounds, $40.00. Savage .32 Automatic, excellent, holster, 50 rounds, $35.00. Mauser .32 caliber, 4½", long barrel, excellent, box Kleanbore, $40.00. Belgium .25 Automatic, very good, 25 cartridges, $20.00. Brevete .25 caliber, 4 barrel pistol, excellent, rare, 25 cartridges, $25.00. H. & R., .22 caliber 7 shot, 5", very good, 300 rounds, canvas holster, $20.00. S. & W., .32 caliber, Safety Grip, Hammerless, nickel 3", new condition. $25.00. Another one very good, $22.00. S. & W. .32 Top Break nickel, new, 3½", $25.00. Another one blue, very good, $18.00. Lady Smith, nickel, 3½", pearl grips, good, $25.00. Colt lightning .38 caliber, very good in, nickel worn out, ivory grips, holster, $20.00. Ammunition on hand. Southerner .41 caliber S.-S. pistol, octagon blue barrel, side swing. Brown Mfg. Co., excellent in, very good out, 20 cartridges, $18.00. Remington 5 barrel .22 caliber, nickel, wood grips, rare, very good, $20.00. Colt Pocket .32 caliber, 2½" nickel, excellent, 200 rounds S. & W. Long, $33.00. Colt Pocket .32 caliber, 2" blue, new barrel, very good, 300 Long Colt cartridges, holster, $30.00. Colt .38 P. Positive, 4", very good, 100 rounds, holster, $36.00. S. & W. .38 S. Action, 4" nickel, very good, 50 rounds, $18.00. S. & W. .38 Hammerless, Safety Grip, 3¼", nickel, 50 rounds, holster, very good, $25.00. Iver Johnson .38, 3¼" nickel, almost new, holster, 50 rounds, $20.00. Iver Johnson .32, new 3", nickel, holster, $17.00. No list. Mortons, 40 Fulton St., New York City. 8-43

SHOTGUNS WITH AMMUNITION. DOUBLES. Fox, Parker, L. C. Smith, Remington. Pumps, automatics. Over and under. List 10¢. George Brullesauer, 3957a Castleman. 10 St. Louis, Missouri. 8-43

FOR SALE—BELGIAN BROWNING AUTOmatic, 16-26, modified, rib, perfect in and near excellent out, $105.00. Krag 2-R Lovell H. B., components, Pacific dies, scope bases, excellent, $120.00. B.S.A. 26 inch H.B. by Eric Johnson, fancy stock, scope bases, one thousand Match cartridges, perfect, $95.00. Remington Automatic 11A, 12-30, rib full, perfect, $85.00. Remington Gamemaster .35 automatic, sheepskin case, perfect, $95.00. Luger .30 caliber, 3¾ inch, excellent, $40.00. Springfield .45-70, excellent, $15.00. Spanish Mauser 7mm., $20.00. '98 Mauser, $22.00. Belgian Browning automatic 16-28, full, V.G. out, excellent in, $75.00. Same, 12-30 full, ventilated and 26 inch I.C., rib, pad sheepskin case, excellent, $135.00. Remington auto 20-26 skeet, sheepskin case, excellent, $95.00. Winchester 1897 pump, Trap Grade, 12-30 full, excellent, $65.00. Savage 99, 250-3000, takedown, $60.00. .22 Hi Power, $50.00. Krag Sporter, .30-40, V.G., $50.00. Winchester 21, 12-32, F.&F., excellent, $95.00. Ithaca Field, 12-32-F.&F., pad, excellent, $65.00. Winchester 65, 218 Bee, sling, oiled, excellent, $65.00. Winchester 67 Clay Target, 500 cartridges, New, $21.00. Mossberg 42M, Lymans, sling, excellent, 500 cartridges, $40.00. Ammunition for all above guns. Herman Treptow, 209-11 South Main Street, Milltown, N. J. 8-43

COLT .45 AUTOMATIC, OUTFITS COMPLETE with belt, holster, clip holder, two extra clips priced according to gun included: Nickel, Pearl grips, $60.00; Springfield Armory model, $60.00; regular Gov't model, $55.00. All excellent with new barrels. 9mm Luger, 8 inch, holster, box ammunition, excellent, barrel perfect, $55.00. Remington .41 Derringer, excellent, original box, cleaning rod, 25 rounds, $30.00. Niedner 28 inch X 1⅛ inch barrel on Walnut Hill action, barrel perfect, straight cheekpiece stock, oil finished, experimental adjustable trigger and hammer fall, with perfect Lyman Polaroid tube and new 77 front and 500 rounds Palma Match, $80.00. Will sell gun separately at $50.00. Barrel alone cost $45.00. Hi-Standard B, 6¾ inch, perfect, trigger shoe, Sanderson curly maple target grips, extra magazine and holder, belt and holster, $50.00. Colt 1917 revolver, .45, good in, very good out, reblued, $35.00. Two boxes Remington .30-'03's, $5.00. Satisfaction guaranteed. Money orders please. No C.O.D.'s. Ed Betz, Life Member, 1510 South Mint St., Charlotte 3, N. C. 8-43

70 HORNET, LYMAN JUNIOR TARGETSPOT 6X, Low rear mount; new fancy stock, high comb, cheek-piece, rubber buttplate, Tenite fore-end and pistol grip-cap, excellent, $150.00. Winchester issue Enfield, brand new, $37.50. Woodsman 6½ inch, very good, $42.50. Colt Official Police, .38 Special, 5 inch, brand new, $50.00. Smith and Wesson M.P., .38 Special, 4 inch, excellent, $42.00. Colt Officer's model, .38 Special, 7½ inch, very good, $48.00. Colt .45 automatic, commercial, fully engraved, beautiful job as new, $80.00. Dee Davis, 6155 S. Keeler, Chicago, Illinois. 8-43

MAUSER ACTION, NO BOLT, VERY GOOD, $8.00. Old Ballard, $5.00. S. & W. .38, tight, serviceable, $12.00. Four cans 4759, one 4320, $6.00. E. W. Robbins, Milford, Mass. 8-43

LEICA CAMERA, MODEL G, SUMMAR f2, perfect in Eveready case, $225.00. Rudolph's, Atchison, Kansas. 8-43

SELL—BALLARD, .45 C.F. FOR 1⅞ INCH shell. 32 inch, round, 10½ lb. open sights, double set triggers, very good; 20 custom loads, $24.00. Winchester .32 S.-L. rifle, fair, 90, Winchester S.P. cartridges, $33.00. Crescent, double hammerless, 12-30 mod. full, good, $22.00. Winchester 97 pump, 12-32 full, pad, fair, $22.00. Baker double hammer riot gun, 12-20 cylinder, good, box, O buckloads, $14.00. I. J. Champion single, 28-28 in., full, good, 50 Super Speed, $12.00. Stevens, bolt, clip, repeater 410—3 inch, good, box shells, $14.00. H.&R. Premier, .22-3 inch Nickel, fair plus, 200-.22 shorts, $12.00. Buy—Benjamin air pistol with bullets. F. A. Baker, Donnelly, Minn. 8-43

RIFLES TO SELL—TWO .30-40 KRAGS, .30 Remington, .32 Winchester Special, .30-30 Winchester, .25-35 Winchester. All excellent condition with 50 rounds ammunition each, $50.00 each. New .300 Savage, 60 rounds ammunition, $85.00. SHOTGUNS TO SELL—Remington 12 automatic, full rib barrel, perfect, as new, $65.00. Winchester model-12, perfect, $45.00. Two, Winchesters, model 97, one 12 gauge, one 16, good, $25.00 each. Double barrel Ithaca, 12, excellent, $35.00. Savage combination. Hornet and 20 gauge, $30.00. AMMUNITION, SELL—.30-'06. .30 Remington. .303, .32 Remington, .25 Remington, .250 Savage, 7mm., few other off caliber, $4.00 per box. TRADE—.30-30 ammunition for .300 Savage & Hornet ammunition. V. L. Olmstead, Ponca City, Okla. 8-43

COLT DETECTIVE .38 SPECIAL, LATEST model, target action, perfect inside, V.G. to excellent outside, holster, cartridges, $55.00. Ben Vaupel, Mt. Vernon, Indiana. 8-43

STOEGER .30-'06 MAUSER, EXCELLENT, $90.00. 7-mm. Military Mauser, turned down bolt, as new, $50.00. Marlin .38-55, excellent, $27.50. Haenel 8-mm. Military Carbine, very good, $27.50. Sauer 8-mm. Mauser, excellent, $75.00. Krag Bull gun, converted to target stock, very good, $35.00. Winchester S.S. Musket .30-40, excellent, $28.00. Winchester .22 L.R. Musket, excellent, $25.00. Winchester 03, .22 Automatic, excellent, $20.00. Remington 81, .35 caliber, excellent, $60.00. Martin Samuelson, 38 Park Ave., Amityville, N. Y. 8-43

PIPER, HEAVY .22 S.S. TARGET RIFLE, VERY good, $15.00. Winchester Hi-Wall, heavy, cartridges, tools, etc., very good .32-40, $30.00. Scarce Warner Cylinder-Rifle, $35.00. Famous Cherington double barreled Kentucky Flintlock rifle, with mould, rare, $150.00. .44 Cap and Ball Colts, Remingtons, good, $15.00. Frank Wesson rifle, $7.00. .35 Self-loading Winchester, $28.00. Parker 12 gauge, $30.00. No. 11 Autoloading Remington 12 gauge, $38.00. 200 others, list for stamp. G. Crozier, Adams, N. Y. 8-43

FOR SALE—PERFECT MODEL J FOX SINGLE ventilated rib, Trap gun, nicely engraved, $125.00. .300 Savage R.S., complete with sling, Redfield 70C absolutely new, with 100 commercial cartridges, $110.00. Perfect Lightning O.&U. Browning, 28 inch ventilated rib, selective single trigger, ejectors, pad, seven pounds, imp.-cyl.-modified, $150.00. T. A. Wallingford, Carbondale, Pa. 8-43

MASTER TARGET WOODSMAN, PERFECT, $65.00. Major Albert Riedinger, Hq. 1st Group, A.F.R.J.C., Fort Knox, Kentucky. 8-43

COMPLETE MASTER OUTFIT: EXCELLENT Winchester 52 H.B. with Vaver sights, B.&L. 55 spotting scope with stand, Fecker 1½ inch scope, shooting box, 40 Aristocrat coat, $200.00. Merle Israelson, Mogadore, Ohio. 8-43

.35 REMINGTON WOODSMASTER, MODEL 81 Automatic, Perfection condition, $70.00 cash. G. M. Austin, 410 W. Church Street, Americus, Georgia. 8-43

SPRINGFIELD TYPE C, NATIONAL MATCH Star gauged, very good, $85.00. .30-'06 Enfield sporter, good, $48.00. Springfield Service, some land wear at breach, Star gauged, $48.00. Winchester No. 94 Carbine, .32 Special, excellent in, $34.00. Remington Autoloading No. 8, .30 caliber, with 120 rounds, very good, $67.50. Krag carbine, very good in, $29.00. U.S.R.A. 22, 10 inch, very good, $32.50. S.&W. .38 Special Target, Monogram 6 inch, cased, excellent, $50.00. List for stamp. G. Crozier, Adams, N. Y. 8-43

SELL—F.A. COPPER PRIMERS 1¢ EACH. Weaver 3-29 scope, $6.00. .25-20 Remington Carbine, good, $25.00. .32 Winchester S.L. Automatic rifle, excellent, 140 shells, $60.00. New .45 Army Automatic barrel, $7.00. Bond loading tool for .220, '06, .270, Krag, and .30-30 combination. 200 primers, $20.00. Bullets extra. .270, '06, and Krag sizing dies (Ideal type) $3.50 each. Winchester .30-30 loading tool, 200 primers, 50 bullets, 25 empties, $10.00 (empties 4¢ each). WANTED—.25 caliber gas checks, small rifle primers. Will trade 40, and 55 grain Sisk bullets. E. W. Henke, 559 South Evergreen, Ventura, California. 8-43

GREENER 20 GAUGE MODEL F.H. 35, Modified and full, stock 14¼ x 1-9/16 x 2-11/16 x 1½ pitch, ejectors, weight 5¼ lbs. straight French walnut stock, silver initial plate, all perfect, leg mutton leather case, side safety independent, plenty of 20 gauge shells, price $300.00. H. J. Ferry, Longmeadow, Mass. 8-43

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.32, .380 COLT AUTOMATIC, PERFECT; TWO .45 S.A. 6", one V.G. one fair, Wells Fargo, $40.00 each, shells, holsters; Ithaca No. 4, 32" full, Trap, perfect, $75.00. Harvard Time-stop-watch, $50.00. Ique stop-watch, $5.00. WANT—Pacific dies .44 Special, .32 S&W Long, Winchester 40 Skeet. N. M. George, Box 206, Riverhead, N. Y. 8-43

S. & W. .22-32, EXCELLENT IN, NEEDS BLUEing, sheep lined holster, 500 Long Rifles, $60.00. H. & R. .32 Automatic, perfect in, very good out, 100 rounds, shoulder holster, $25.00. WANT—Complete Target rifle outfit. F. D. St. Clair, Port Jefferson, N. Y. 8-43

SALE OR TRADE—CHAS. DALY 20 GAUGE double, Krupp Fluid Steel barrels with .25-35 under, excellent to new with 150 shot shells, 100 rifle shells, original cost about $400.00, $200.00 cash or trade, .30-'06 or heavier and a shot gun with ammunition. Man's Longines wrist watch, 15 jewel with yellow gold band and 32° Masonic ring, white gold eagle with 70 point, perfect blue white diamond for what have you? M. W. Henney, Tooele, Utah. 8-43

FOR SALE OR TRADE—M-70 .300 H&H MAGnum Target Rifle, excellent to perfect, shot less than 100 rounds of factory ammunition, scope blocks, Lyman 77 front, Lyman 48 rear and sling, $130.00. F.O.B. Plenty ammunition if wanted, extra charge. Will trade for the following or accept as part, all must be new or perfect. M-70, .257 with 440 or 330 scope & Stith or Redfield Jr. mount, B&L 7X35 binoculars, Fecker 8X, 1¼" scope. George J. Hall, 256 N. 11th Ave., Pocatello, Idaho. 8-43

FOR SALE: (1) VERY GOOD M-70, .220 SWIFT, Standard, with 1½ inch, 10X Fecker scope, fired 123 rounds, $185.00. (2) Very good M-70, .220 Swift Target Model but with Super Grade stock, scope blocks, fired about 600 rounds, with Weaver 330 scope, $165.00. (3) Very good M-70 .220 Swift Target Model on Custom Built Pup stock, scope blocks, fired about 600 rounds, $140.00. May sell separately or accept 1½ inch Fecker 10 to 16X, Lyman Super Target 10 to 15X and large rifle primers as part payment. TRADE; 2500, W-116 N.M. N.C. primers in sealed boxes even for large rifle primers. Capt. M. E. Smith (Member) Station Hospital, Sheppard Field, Texas. 8-43

1 WINCHESTER DELUXE 71, EXCELLENT condition, 40 rounds ammunition, $75.00. Winchester Model-12, 16 gauge, 28" modified, good, barrel very good, 150 assorted shells, $47.50. WANT—12 double and ammunition. George Eagleton, 310 W. 2nd St., Reno, Nevada. 8-43

WANTED—.32-40, BARREL GOOD. DESCRIBE, price? Cartridges. Sell good .40-82 Winchester reloading tool and bullet mold, $4.50 postpaid. Konrad Hartbauer, Boundary, Washington. 8-43

WINCHESTER MAGNUM BARREL ONLY, 12-12-32, complete with slide and tube, ribbed, full, perfect, $32.50. Four boxes Hornets, 3000 hornet primers, bullets, powder. Ten boxes .257's. Five boxes Swifts. Two cases 16 shells. Trade part, all or buy high grade 12 double. Dr. Chas. C. Adams, Longview, Texas. 8-43

SALE OR EXCHANGE—NEW WIN. ENFIELD .30-'06. Excellent sporter stock, Lyman 48 rear, Redfield No. 40A square red bead, removable hooded front sight, 50 rounds issue ammunition. Cash $75.00. Trade $80.00. WANTED—Super Target-spot or Fecker 8 to 12 power scope with mounts. No. 828 adapter back for 9X12 C.C. Maximar or Recomar. Kodak Bantam Special. FOR SALE—No. 1460876 better than good, N.M. Springfield service rifle, late style stock, sight covers, O'Hare mike. 50 rounds issue ammunition, $65.00. Howard L. Hubler, 1423 Oak Grove Dr., Los Angeles 41, California. 8-43

FOR SALE—CARTRIDGE COLLECTION OF over 400 items, handguns, rifles, reloading tools and components, .30-'06 ammunition, automobile mechanic's tools, wrenches and sockets. Please send stamp for list wanted. WANTED—.38 Special dies for Schmitt reloading tool, screw cutting bench lathe, 7.62-mm. ammunition and reloading tools or dies, .45 Auto Rim ammunition. Jack Alves, Box 404, Manchester, Conn. 8-43

SURF FISHING OUTFIT COMPLETE, ALL EXcellent to perfect. Used once all accessories. Satisfaction guaranteed, $20.00. Cost $40.00. TRADE —for Pacific tool or ? Make Offer. TRADE—500 Remington L. R. H.S. H.P. for Mauser action or ? Frank Smith, 141 Cleveland St., Brooklyn, N. Y. 8-43

SELL-TRADE: WINCHESTER '98 CANNON. Excellent. $20.00 or equal value .22 target revolver. 9-mm, 4", DWM Luger, good, $50.00 or trade for equal value K-22 Masterpiece. Walter Greenwood, Coffeen, Illinois. 8-43

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BRAND NEW UNFIRED MODEL-70 .30-'06, new sling, 7 boxes ammunition, new deluxe sheepskin case, cleaner and patches $145, or trade for .22 Long Rifle ammunition. Trade 21 boxes 3" 12 gauge shot shells for Long Rifle Cartridges. O. L. Vosburgh, Underwood, Washington. 8-43

SELL—SPRINGFIELD ACTIONS, LOW NUMbers, re-heattreated, $18.00 to $22.50. Excellent Mauser action, polished, $20.00. Issue '98 Mauser, $24.00. Springfield '03, C stock, excellent out, fine pits in bore, accessories, $55.00. Two Mauser barrels, fair, $4.00 each. .38 Special O. M. H. B. barrel, 6" without sight, excellent, $5.00. Same 4", very good, $3.50. .38 Army Special barrel 4½", poor, $1.00. P.P. 4" .38 barrel, fair out, good in, $1.25. P.P. .32, 4" barrel, good, $1.00. Two .45 ACP barrels, pitted, $1.25 each. Incomplete Mannlicher '88, $3.00. Few 1903 parts. .45 ACP magazine, $2.00. Shooting coat, $3.00. Two metal spotting scope stands, $3.00 each. Sling keepers 50¢. Front and rear sight covers (1903) $1.00. Parker rod brushes 50¢, .30 cleaning rods, shotgun 40¢, rifle, brass or steel .30, $1.15. Graphite grease 25¢ tube. Ideal mould without wood grips, No. 3034-200 $1.25. Scorebooks, .30-'06, 80¢. WANT—8mm. ammunition, excellent Swift barrel, excellent late model 12 Browning automatic with rib barrel, pistol primers. Money back guarantee. Jim Berkland, 917 Locust, Des Moines, Iowa. 8-43

O.M.T. 5" TARGET, .38, EXCELLENT, SHOULder holster, $70.00, trade for O.M.T. 6" HB, same condition with holster. Greener 16. FH25, excellent. quail gun, one case 16 shells, $200.00, trade for 20 double same condition and one case 20 shells. WANT —Bankers Special or .22 Kit Gun. Nat Breedlove. Valdosta, Ga. 8-43

BAUSCH & LOMB 6X30 I.F. BINOCULAR, lens needs recementing, otherwise good, $35.00 or want .38 Detective Special. David Swindell, Ocala, Florida. 8-43

TRADE—MODEL 70, .250-3000 BARREL, PERfect for like .257 or sell $20.00. Buy .257 same. Eugene Hopper, 1550 Ruth St., Walla Walla, Washington. 8-43

SELL OR TRADE—.22 N.R.A. MATCH RIFLE, blueing shows wear good or better, new finish, full stock, sling, aperture sight, $25.00. Have 10, 16, 20 Gauge shells, 30-30, .38 A.C.P., .300 Magnum cartridges to Trade for L.R. only. Want perfect Win. M-63, Match Target Woodsman. J. G. Griffith, 4600 Kensington, Tampa, Fla. 8-43

FOR SALE OR EXCHANGE—MAUSER '98, INside perfect, no stock, original sights removed, new Pacific ramp, 45 factory loads. $25.00. Trade for Pacific .30-'06 dies, .257 bullets, .30-'06 soft and open bullets, large rifle primers. N. N. Galliher, 919 Arlington Ave., Bristol, Virginia. 8-43

FOR SALE OR TRADE—.22 L.R., .38 SPECIAL, .30-'06 N.C. ammunition or O.M.T. .22. Colt Pocket Positive .38 S&W, 4 inch reblued, pearl grips, holster, 100 Kleanbore, V.G., $55.00. O.M.T. .38 Special, 5 inch, stag grips, holster, 100 shells, V. G. in, G. out, $60.00. Colt, .45 auto., Govt. model, Rebuilt all new parts and reblued, Arched back, checkered trigger, extra barrel, holster, some ammunition, $65.00. B&L 8X30 Army type, good optically, outside worn, case $65.00. Voigtlander Superb Reflex, Heliar 3.5, Compure delay action to 250th, Everready case, filters and Zeiss proxars, Weston meter. 6 rolls film, Flash gun $110.00. Ammunition 100-.405 Win. $15.00. 60-.275 Magnum $11.00. 100-.41 C.F. $10.00. 120-.25 Remington $15.00. 100 Colt .38 auto, $12.00, some .38-40. .32-40, .22 Hi Power, etc. WANTED—Box of .41 R.F. M.O. only. Fine welding repair work for gunsmith. Martin Friedman, 1421 Phillips St., South Norfolk, Virginia. 8-43

FOR SALE—VERY GOOD WINCHESTER .22 auto, with Mossberg scope and 1000 rounds of fresh ammunition. $80.00. Will trade for excellent pair of binoculars, preferably 10X50. Ronald Innes, Savageton, Wyoming. 8-43

.45 COLT AUTO., 1911, GOOD, 100 CARTRIDGES, holster, $55.00. Trade for S&W .44 Spl. 6½ inch. Excellent to very good. Pay difference. William Kilpatrick, 8504 George St., Center Line, Michigan. 8-43

BELGIAN BROWNING AUTOMATIC, 12X25. compensator, recoil pad, good, $75.00. W&C Scott Double hammerless, 12X32, full engraved receiver. good. $100.00. W. W. Greener Double hammerless. 12X30, full, good, $65.00. Savage M1921, slide. 12X30, full, recoil pad, good, $38.00. Tower Flintlock 1835, 12X39, good, $25.00. Tower 1863 Percussion, 58 gauge, 39 inch barrel, very good, $10.00. Savage Carbine 99H,, 30-30, excellent, $60.00. Remington M8 Automatic, .32 Remington, excellent, $75.00. Winchester M64, .30-30, Lyman, perfect, $70.00. Marlin Carbine M93, .32-40, good. $28.00. Winchester Carbine M-53, .44-40, shotgun butt. good, $40.00. P. Ashmore Percussion .40 caliber. 39 inch barrel, full stock, many inlays, very good. $40.00. Luger DWM .30 caliber. 3¾ inch, good. $40.00. Colt New Service, .45 Colt, 7½ inch, excellent, $55.00. S&W Military, .455 caliber, 6½ inch, good, $38.00. Remington Pocket Model .380 auto., excellent, $30.00. Savage Pocket Model, .32 auto., very good, $22.00. Many others. List. Stamp. Ed Howe, Coopers Mills, Maine. 8-43

FOR SALE OR EXCHANGE—EXCELLENT WINchester 1892 Bee, open sights, Box cartridges, $35.00. Want Savage or Marlin 12 gauge Over and Under. A. C. Huber, Sheffield, Illinois. 8-43

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WINCHESTER LOW-WALL AND BARREL blank, $25.00. .22-32, $35.00. 10 gauge double percussion, $15.00. New Savage 23AA, 29S, Redfield mount, $60.00. WANT—.38 Frontier. C. Nieset, Millersville, Ohio. 8-43

WINCHESTER MODEL-12, 16 GAUGE, 28" modified, perfect, 150 shells, $60.00. Krag Sporter, Bishop stock, checkered, newly reblued, ramp front, adjustable peep rear, 40 cartridges, $40.00. Paramount Banjo, Style C, with case cost $275.00, excellent, $100.00 or trade for bolt action Sporter, any caliber or what have you? Weldon F. Pavitt, 1502 East High St., Jefferson City, Missouri. 8-43

.300 SAVAGE, 99-G, EXCELLENT, 14 CARtridges, $65.00. '03 Winchester .22 Auto., 300 clean cartridges, V.G. in, good out, $20.00. Winchester 75 Target rifle, excellent, 500 rounds Remington Kleanbore, $40.00 complete. Winchester .22 W.R.F., with 4X Wollensak scope, good, $25.00. Remington Standard portable typewriter, elite type, V.G., $40.00. .22 caliber blanks, 8000 for $15.00 or $2.00 per. WANT—Ladysmith, V.G. or better, 100 rounds .25 automatic pistol cartridges Paul E. Hughes, Milan, Ohio. 8-43

FOR SALE—.357 MAGNUM PACIFIC TOOL, True Crimp tool Steel dies, $16.00. 2000 sized, lubricated Magnum bullets (also fine for .38 SPL.), $15.00. Winchester 94, .32 WS. octagon barrel; excellent in, good out; cartridges, $30.00. Trades considered. William Magda, 364 South Front, Memphis 3, Tenn. 8-43

.41 SWISS RIFLE, 16 SHELLS, EXCELLENT, $16.00; 2, Hopkins & Allen .38 revolvers, fair, $8.00 each; .32 U.S. revolver, excellent, $10.00; L.C. Smith 10 gauge double, poor, Trigger break, $7.00. 400—.30'6, $20.00. Sell, Trade or what have you? Francis Yonker, Mantua, Ohio. 8-43

S-29 (SKY-TRAVELER) HALLICRAFTERS portable radio—A.C., D.C., batteries, 4 wave bands, excellent, $65.00. 300-45 Automatic ammunition, $12.00. Combination locking money chest, $40.00. Lufkin 75 foot tape on reel, $7.50. K-22 with silver holster and 500 Long Rifles, excellent to perfect, $105.00. Colt .32 automatic, 30 cartridges, very good to excellent, $35.00. All F.O.B. St. Louis. Will trade or buy machinist's and power tools and safe deposit boxes. Craig McLeod, 7810 Weil Avenue, Shrewsbury, Missouri. 8-43

PARKER "V" 12 GAUGE, FULL, $60.00. Winchester 24, 20 gauge, new, $43.00. Winchester 65 Bee, perfect, $62.50. Winchester 70, .375 H.&H. Magnum, (unfired) 60 rounds ammunition, $135.00. Paul Ratliff, N4912 Market, Spokane, Wash. 8-43

MODEL-70 WINCHESTER, .300 MAGNUM BULL, 48 rear, 77 front, scope bases, outside excellent to perfect, inside perfect, 3 boxes Silver Tips. Savage 99, .303, outside good, inside very good, box shells, $35.00. 3 boxes .30-30's, 1 new, 2 old, but good. $11.00. WANT—regular weight Model-70's or .348 with G. & H. mount and scope, or Model 21, 12 gauge. Trade value for value. Bert Brush, Cut Bank, Montana. 8-43

WINCHESTER 97, 5 SHOT PUMP, 16 GAUGE, 28 inches modified, like new, $50.00. Maytag gas engine ¾ H.P. single, A-1 shape, $30.00. Speed-O-Print duplicator, extras, like new, $45.00. Mossberg 4X scope, usable, $4.00. Firestone 8 tube auto radio, new, $39.50. Kingfisher electric troller, new, $34.95. WANT—cut film type camera, enlarger, print dryer, 8mm. projector, exposure meter, etc., or what have you? Connie Malinowski, South Deerfield, Mass. 8-43

.218 BEE, M-92 RELINED BY ACKLEY, BORE perfect, 70 cartridges, $40.00 or? WANT—Components (especially bullets) and ammunition for .22 Hornet; .250-3000; .257; .270; .30-40; .30-'06; .300 Savage and .300 H.&H. M-70, .257; .270; .30-'06; .300 H.&H. Magic Wand welder. R. L. Eager, Box 411, Rainier Oregon. 8-43

SURVEYOR'S TRANSIT-LEVEL, NO TRIPOD, V.G., $22.50. Spanish Military Model Auto .32 V. G., $16.00. Savage .32 Automatic, good plus, $22.00. WANT—piece of .44 barrel. Colt S. A. what? Edward Bastel, Prairie du Chien, Wis. 8-43

BINOCULARS—BAUSCH & LOMB 6 x 30 SIGNAL Corps, $60.00. WANT M-70 .220 Swift Target. Clarence Jordan, 110 N. Hancock, Madison, Wisconsin. 8-43

.270 MAUSER, REBARRELED BY GRIFFIN & Howe, custom stock, $135.00. WANT—.257 barrel and action, Winchester or Remington. Keith Stegall, Box 1101, Pampa, Texas. 8-43

WINCHESTER 70-'06, REDFIELD REAR, EXcellent; Weaver 330, B mounts, new; 65 rounds M-1; 20 Winchester 180 grain S.S.; about 100 Hi-Speed handloads; 500 empty fired cases; Pacific '06 sizing and seating dies; Pacific .30 caliber bronze mould, 115 grain; about 300-.30 caliber gas checks; .311 and .3095 dies for Ideal sizer; about 2 pounds of 1185 powder; entire outfit $150.00 or will sell separately. Pacific sizing and seating dies and shell holder for Hornet, $8.00. Kodak 6-16, Kodamatic shutter, Anastigmat f4.5 lens, as new with case and two rolls film, $35.00. TRADE ONLY—1000 UMC, NMNC, number 1½ nickeled primers for like quantity large rifle primers. WANT—Model 20, .250 Savage; Lyman Alaskan; 70 Winchester .250 barrel; Leica or other highgrade miniature or pack camera. Charley Vomicil, Box 703, Yuma, Arizona. 8-43

SAVAGE .30-30 BOLT ACTION, NEW CONDItion, peep, gold bead, 120 cartridges, $100.00. .351 Winchester Automatic, fine bore, good out, peep, gold bead, 57 cartridges $50.00. Savage 23-D Hornet, excellent in, very good out, Ideal tools, sling, peep, 450 loaded cartridges, $60.00. Remington 241 late automatic Long Rifle, perfect in, like new out with Weaver 29-S, very accurate, $60.00. Without scope $42.50. Remington 12 automatic, full, excellent in, very good out, $60.00. Ward's Western Field, 20 gauge 3 shot, $20.00 with shells, good. Six broken guns all for $10.00. Three dozen Johnson folding Mallard, Sprig, Canvasback decoys good condition, $5.00 dozen. Split bamboo salmon rod, 7½ feet, eight agate guides, alluminum case, $15.00. Beautiful sportsman's modern home has everything your heart desires, boating, swimming, hunting, fishing on clear lake, $15,000.00 cash. WANT—330 Weaver, Stith mount for Winchester 70. Repeating Winchester .410 with shells. Excellent .30-'06 and Krag. Model-70 Swift with components. Light outboard motors. Money orders only. Frank Ora, Lakeport, Calif. 8-43

SPRINGFIELD .30-'06, Special stock, shock pad, Lyman 48 rear, 17A front, very good, $50.00. Crossman .22 caliber repeater, three boxes pells, excellent. WANT—Kodak 35 or Argus C-3. A. J. Cook, Delaware, Oklahoma. 8-43

7 X 50 HENSOLDT MARINE DYALT BINOCUlars, with case, excellent, $145.00 M. O. WANT—.270, Model-70 Super Grade, with Alaskan. C. L. Barnhouse, 27 Parkhurst St., Newark, N. J. 8-43

SELL OR TRADE—COLT POLICE POSITIVE, .38 Special, 4" barrel, excellent in, very good out, $40.00. S. & W. top break .44, 6" barrel, fair, $18.50. Trade for rifles, shotguns or handguns. R. G. Elston, Marshall, Ill. 8-43

EXCELLENT 70, .30-'06 TARGET RIFLE, $120.00. B. & L. 7 x 35 binoculars, like new, $98.00. New Colt Ace barrel, $4.00. Parker DHE, $200.00. .30-'06 cartridges 5¢. Will trade 1M .22 cartridges or primers for good action. Gopher Shooters Supply, Faribault, Minn. 8-43

9MM. 4", DWM LUGERS, O.M. EAGLE, SQUEEZE grip, brand new condition, $75.00. Another N.M. excellent, $60.00. S. & W. .22-32, V.G., $45.00. WANT—Ace, .38 Special, Magnum. Leslie Vanatta, Covington, Ohio. 8-43

WANTED—BRASS HANDLED 1918 TRENCH knife for overseas duty. Will trade for knife only, .22 bullets, Long Rifles, primers or cash. SELL—New Lyman 48WJS, $10.50. Harold Wing, Klamath Agency, Oregon. 8-43

WINCHESTER 70 HORNET, LYMAN 48, blocks, 50 cartridges, 300 bullets, 300 primers, 100 cases, excellent, $105.00. .300 H. & H. N'edner barrel, 30 inch, fits Enfield, very good, $15.00. Mauser Kar, standard bolt, very good in, $22.50. 160, .45 Automatic, F.A. cartridges, $8.00. WANT—Farquharson. F. F. Tubbs, 3647 Lilac, Lansing, Mich. 8-43

TRADE—COLT NEW SERVICE, .38 SPECIAL, six inch, excellent; Police Positive .32, 2½ inch, very good. WANT—Smith and Wesson .357 Magnum. John D. Sullivan, Jr., Franklin, Vermont. 8-43

SELL OR TRADE—WINCHESTER SCHEUTZEN rifle, No. 4 barrel, D.S.T., very good, $50.00. H. & R., .22 Special, H. F., excellent, $20.00. .45 automatic ammunition, $5.00 hundred. WANT—70 Winchester, 16 gauge shotgun, etc. Earl Price, Lodi, Wisconsin. 8-43

WANTED—WINCHESTER, LYMAN 5A WITH mounts. S. & W. .35 Automatic. '98 Mauser. Pay $20.00 each. Pay 4¢ each for .250-3000, .30-30, .300, .270 empties. Paul Ratliff, N4912 Market, Spokane, Wash. 8-43

SELL OR TRADE—L. C. SMITH, IDEAL GRADE, 20 gauge, excellent to perfect, six boxes shells, $70.00. Want Officer's Model .22 or 52 Sporter. Ray Davis, Rector, Arkansas. 8-43

SELL OR TRADE—HI-WALLS, 218-B, $40.00. .22 Niedner, $50.00. Components extra. Remington 121-A, 500 L.R., $42.50. Stevens S.S., 500 Shorts, $12.00. Few boxes Zipper, .25 Remington, .250-3000, .257, .300 Mag., .303, .32 Remington, .357 Magnum, 16 gauge, $2.00 to $3.50. WANT—2-R, K-Hornet, .250-3000, 270, 300 Savage and components. Empties, .30-30, Hornet, Bee. Stamp please. A. French, 4603 Westminster, St. Louis, Missouri. 8-43

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TRADE—VERY GOOD .22 BANKER'S SPECIAL, Nickel, for similar Kit gun. F. K. Wylie, Jr., Winchester, Kentucky. 8-43

TRADE—2000 LARGE AND 1000 SMALL PISTOL primers for .45 Colt Automatic, describe fully. C. M. Berkshire, 1343 N. Olney, Indianapolis, Indiana. 8-43

TRADE—COLT MATCH TARGET, .22 CALIBER excellent condition in and out FOR .22 L.R., .250-3000 and .300 Savage cartridges. No Cash Sale. Warshal's, 1st & Madison-BB, Seattle 4, Washington. 8-43

MODEL-11 REMINGTON AUTOMATIC, 20 gauge, 28 inch solid rib, full, ammunition. Inside excellent, outside very good, for: Model-20 Savage .250-3000. receiver sight. Ammunition, same condition. Francis C. Blum, Akron, Iowa, Route 1. 8-43

TRADE—COLT .45 AUTO., NEW CARVED Heiser, ammunition, extras. For All Weather Alaskan, Hensoldt, Zielvier 4X, etc. Write. Joe Albanese, 2236 So. Wentworth Ave., Chicago, Illinois 16. 8-43

TRADE—.401 caliber new, self loading rifle, for a Standard weight 52 Winchester, speed lock, new. Or new, Model-70, .30-'06. SELL—.38 S. & W. Special, good, 6 inch barrel, $20.00. .44 S. & W. Special, fair, plus $20.00, 6 inch, or trade for Winchester Model-75, excellent, or Model-61 Winchester. D. B. Conley, Swampton, Kentucky. 8-43

TRADE—EXCELLENT 6½" WOODSMAN & 1000 Kleanbore Long Rifles for excellent Ithaca 28 gauge double 28" barrels. L. B. McDonald, 525 Vine St., Hammond, Indiana. 8-43

TRADE—HI-STANDARD M-B VERY GOOD IN and out. For .22 L.R., .250-3000, and .300 Savage cartridges. No cash sale. Warshal's, First and Madison-BB, Seattle 4, Washington. 8-43

TRADE—1100 REMINGTON 6½" N.M.N.C. For 2½, 8½, 9½, have 500 F.A., .45 primers, perfect High Standard Model D, 6½". WANT—.375 Mag. barrel 10" Long, will take full barrel or gun to get it, 100 used .30-30 and .375 or .300 cases. Harold Ulery, 1721 Elm St., Manhattan Beach, Calif. 8-43

TRADE—STARRETT, LUFKIN MACHINIST tools for .224, .270 bullets, primers, Targetspot, Mauser action. Robert Beaton, Sebring, Ohio. 8-43

TRADE—NEW 330 WEAVER, NO MOUNTS, for Hornet bullets, or bullets and cash. What's your offer? Dr. W. D. Witham, Glouster, Ohio. 8-43

TRADE—.30-30 OR .32 SPECIAL FOR .300 SAVage cartridges. Also Trade 8 gauge Charles Daley. For what have you. Russell Fierge, 902 Main, Quincy, Illinois. 8-43

TRADE—ONE COLT .38 SPECIAL, SINGLE Action Army revolver. 5-¾ inch barrel, stag grips, excellent. WANTED—Excellent Colt Officer's Model Target .38 Special heavy barrel. Lt. E. E. Sack, 3037 Austin Street, Corpus Christi, Texas. 8-43

FOR TRADE—KRAG RIFLE, NEW, PERFECT. .22 inch, .30-40-95 Winchester, good. Either for Weaver 440B or Alaskan. 500—No. 115½ Winchester Staynless and 1400 F.A. .30 caliber primers for 22L.R. Kleanbore. 1 Kar 88, 1 Gew 98 action, either for Pfleuger Supreme. .38 Special Colt N.S. extra good, for Model 70-'06 or Springfield same. Jerry Kirkpatrick, 406 S-2nd, Dodge City, Kansas. 8-43

TRADE—PERFECT SAVAGE .250-3000, 99-G for perfect DWM Luger, 9mm. 6", with cartridges, no war junk. Perfect S. & W., M. & P. .38, 6" for perfect Hi-Standard H-D, 6¾". Excellent Bisley .45, 4¾", 139 black, Pachmayr adapter, for excellent Mauser military automatic pistol. Ellison Whelen, Villanova, Pa. 8-43

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TRADE—.30-'06 AMMUNITION FOR KRAG ammunition. SELL—Very good .32 Mauser Automatic, $30.00. S. & W., 4" Military & Police and holster, $40.00, very good. Fair Spanish .44 pistol, $7.50. Antiques, stamp for replies. Charles Neumann, 3507 S. Benton, Kansas City, Missouri. 8-43

TRADE—225 LOVELL CARTRIDGES, 5M SMALL rifle primers, .30-'06 F.M.J. ammunition, 330 primed .30-'06 cases. WANTED—.300 Savage cartridges, large rifle primers, powder scale, .22 & .30 caliber bullets, .22 O.M.T. K-22. Herman Treptow, 209-11 South Main St., Milltown, N. J. 8-43

TRADE—WATCH—21 JEWEL ELGIN, B. W. Raymond railroad, perfect, present cost $72.50. Trade for high grade firearms. .41 Short Colt black center fire, $1.75 hundred. Emmett Ewing, 2711 Fifth, Louisville, Ky. 8-43

TRADE—WILSON WANTS AUTOMATIC PISTOLS—.32-.380-.45 and Lugers. Spanish, German and American. Let us know what you want in trade. List ready. Wilson's, 3082 West 25th Street, Cleveland 6, Ohio. 8-43

TRADE—PHOTOGRAPHIC EQUIPMENT, ENlargers, developing tanks, developers, other accessories for South Bend Lathe or accessories. Write your wants. Lloyd Morris, Great Bend, Kansas. 8-43

TRADE—500 .30-'06 ISSUE, COMPLETE '98, Krag action, '06 components. WANT—.22 Long Rifle reg., scope or ?. Details stamp. Larry Calligan, Hillsdale, Michigan. 8-43

TRADE—STILL A FEW UNUSED WINCHESTER Enfield .30-'06 barrels to trade for large rifle primers or .22 Long Rifle cartridges. Will trade on a basis of one barrel postpaid, for 1,000 N.M.N.C. primers or 1,000 noncorrosive cartridges prepaid to me. Robert Haelig, Boundbrook, N. J. 8-43

WANTED

WANTED—CASH FOR YOUR FINE AND BEAUtiful guns. Hershey's, Orrville, Ohio. 10-43

WANTED—.220, .257 or .270 BARRELS; ALSO Mauser or Springfield actions; Redfield Jr. and 200 .257, 100 grain bullets. Exchange 4 boxes 20 gauge shells for four boxes .410. Roy Vail, Warwick, N. Y. 8-43

WANTED—PERFECT OR EXCELLENT .270 Winchester. S. V. Kinser, Box 586, Raymondville, Texas. 8-43

WANTED—LARGE PISTOL PRIMERS FOR .45 Colt; also Colt S.A.A. .38 Special or .357 Magnum, 7½" barrel, must be in perfect condition in and out. J. A. Beaulieu, Brunswick Rifle Club, 13 Pleasant St., Brunswick, Maine. 8-43

WANTED—GOOD WINCHESTER 63. WOULD trade ammunition .30-30 or other; also want extractor for Mauser; Krag parts; Winchester Low-Wall .22 caliber. Frank Foster, Clovis, New Mexico. 8-43

WANTED—PERFECT, COMPLETE BOLT FOR Model 1898 Krag or perfect bolt handle. Russell Starn, 624 Duryea, Raymond, Washington. 8-43

WANTED—PAIR ZEISS OR B. & L. 7X50 BINOCulars; also Marlin 90 shotgun, 12 gauge, 26" barrels and .25 Colt Automatic. Mel Leitch, 130 Linden Avenue, Glen Ridge, New Jersey. 8-43

WANTED—COLT WOODSMAN M.T., MUST BE in excellent condition, let me know what you have and the least cash price. E. C. Click, Freer, Texas. 8-43

WANTED—SAVAGE MODEL-99R, .300 CALIBER with ammunition. Perfect or excellent. Wendel E. Weddle, Stayton, Oregon. 8-43

WANTED FOR CASH—SHOTGUNS, RIFLES, Pistols and Revolvers. Can use all makes and types. Describe guns fully in first letter, state price, all mail answered. Big Ben Mercantile and Loan Co., 179 Third Street, San Francisco, Calif. tf

WANTED—PERFECT COLT ACE. DESCRIBE fully. State price. Philip Lambert, 29 Cabot St., Salem, Massachusetts. 8-43

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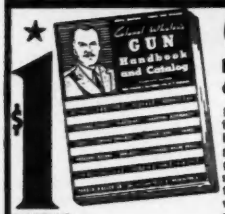

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WANTED—PERFECT .22 WINCHESTER Model-63 rifle. Will pay $2.00 per box for .22 Long High Speed, $3.00 per box for .38 Special, fresh cartridges. G. Barnaby, 857 W. Huntington Drive, Monrovia, California. 8-43

WANTED—MODEL-70 WINCHESTER .300 MAGnum, Crossman air rifle and pellets. Very good or better. Bill Welsh, Box 2366, Anchorage, Alaska. 8-43

WANTED — WINCHESTER, REMINGTON .22 L.R., Target rifle, spotting scope and 10X telescope sight; also DeLuxe .30-'06, .270, or beautifully engraved drop action, or rifle. Describe and price in letter. L. Elwood, 12304 Wyoming, Member, Detroit, Michigan. 8-43

WANTED—LYMAN SUPER TARGETSPOT IN 10, 12 or 15 power with mounts; also Colt Detective Special. Must be perfect or excellent. State price wanted. A few 12 gauge trap loads, .22 Long Rifle or .30-'06 factory loads will be submitted by me as part payment if seller so desires. Philip G. Rust, Grandogue, Delaware. 8-43

WANTED—MARLIN OVER & UNDER, .410, .22 Long Rifle or Hornet. Inman Turpin, 3225 Spottswood, Memphis, Tennessee. 8-43

WANTED—PAY $11.00 FOR NEW CONDITION Redfield Jr. mount for Model-70 and 330. WANT—Stevens Offhand, 8-inch barrel and ammunition. SELL—Redfield 70WT peep, $5.50. Willis Erwin, Oroville, Washington. 8-43

WANTED—.30-'06 AND HEAVY BARREL .22. Ted Anderson, RT. 2, box 418, Anaheim, California. 8-43

WANTED—COLT D.A. FRONTIER OR ARMY. Frames or complete guns in poor condition, for parts and conversions, condition of barrel or caliber immaterial. D. M. Branch, Dunsmuir, California. 8-43

WANTED—FAIR PRICES PAID FOR TARGET pistols, revolvers, rifles and antique guns of all kinds. Ship for estimate. Public Sport Shops, Dept. R-63, 13 S. 16th St., Philadelphia, Penna. 8-43

WANTED—ONE .22 CALIBER TARGET PISTol. Please send details with offer. J. J. R. Bristow, Citrus Concentrates, Inc., Dunedin, Florida. 8-43

WANTED—H. & R., U.S.R.A., 7 INCH BARREL preferred, very good or better. H. W. Schermerhorn, Lena, Illinois. 8-43

WANTED—PERFECT WINCHESTER MODEL-70, .30-'06, Lyman 48 WJS. S. A. Landry, 221 59th St., Niagara Falls, N. Y. 8-43

WANTED—WILL PAY CASH FOR GOOD WESTern saddle, fishing tackle, out board motors and guns. Roy Schmalz, Bloomington, Indiana. 8-43

WANTED—COLT AND S&W REVOLVERS, Automatic pistols, .30-'06 cartridges, .45-70 cartridges, Springfield rifles, Enfield rifles, Krag rifles, cameras any make. Warshal's 4, 1st & Madison-BB, Seattle, Washington. 8-43

WANTED—ENFIELD OR REMINGTON 30S ACtion, or complete, any caliber. J. Rognon, 1040-S. Osage St., Inglewood, California. 8-43

WANTED—MODEL-95 WINCHESTER .30-40 solid frame, Krag issue, long barrel, good or better. 400 N.C.N.M., 8½ primers. 500-.30 Cal. gas checks. State condition and price first letter. Harold Belknap, Central Square, New York, N. Y. 8-43

WANTED—30'06 CUSTOM SPORTING RIFLE. Must have fine Custom stock and scope mounted, excellent cond., describe in detail. Also want fine 52 Sporter, scope mounted. Am still collecting fine Sharps Creedmoor target & sporting rifles. M. C. Clark, 169 N. La Peer Drive, Beverly Hills, California. 8-43

WANTED—FOR CASH: ONE 70 WINCHESTER National Match .30'06 or .300 H.&H. Magnum. One No. 1A- Model No-ske scope (Latest Model with mount) for same rifle. One Pacific reloading tool (for same) with tool steel dies. One Ideal lubricater and sizer and one Ideal micrometer powder measure. Powder and primers for same. I will buy these altogether or separately. All must be excellent to perfect. Describe fully. All letters answered. W. Herb Smith, 601 Joy St., Corona, California. 8-43

WANTED—FEW BOXES 12 GAUGE AND 20 gauge shotgun shells, also .22 blanks. Pay cash or TRADE Kleanbore .22 L. R. ammunition. A. T. Mickle, R-4, Madison, Wisconsin. 8-43

WANTED—52 SPORTER, FOR CASH. PLEASE describe. D. E. Larson, 2208 So. Downing, Denver 10, Colo. 8-43

WANTED—AUTOMATIC PISTOLS .22, .32 AND .45 caliber. Warshal's, 1st & Madison-BB, Seattle 4, Washington. 8-43

WANTED—EXCELLENT M-70 HORNET OR .257. WANT ammunition or primers and powder for Hornet, .257, or .30-'06. Must be fair price. Richard Timmons, King City, Missouri. 8-43

WANTED—ZEISS ZIELVIER, M-70, MOUNT, any caliber Pacific dies, any caliber jacketed bullets, large or small rifle primers, any caliber brass fired once. Fecker or Lyman Target Scope, 12.5 or 15 power. .257 Super Grade, M-70 Roberts. Hornet, Super Grade, stock only for M-70 Winchester .30-'06. Have cash or will sweeten with 5 boxes of following, .30-30, .300 Savage, .32 Special, .220, .257, or .22 Palma. R. V. Manning, 11757 2nd Avenue, N.W., Seattle, Washington. 8-43

WANTED—S&W, .38, Safety Hammerless or other pocket revolver; .22 revolver, recessed cylinder; 12 gauge single; .22 Stevens Crackshot, Little Scout or Remington Rolling Block, all good or better. Ammunition. J. D. Feltham, 1611 N. Stevens, El Paso, Texas. 8-43

WANTED—COLT AUTOMATIC PISTOLS, .25, .32, .38 or .45 caliber. Warshal's, 1st & Madison-BB, Seattle 4, Washington. 8-43

WANTED—WINCHESTER 70 OR REMINGTON 720, prefer Super grade, consider Standard, any must have aperture sight or hunting scope, hunting stock, calibers .257 or .270 or 7-mm., excellent or better with ammunition. W. G. Clayton, 1422 West Division, Grand Island, Nebraska. 8-43

WANTED—SINGLE BARREL ITHACA, SO'SA grade. Must be in good condition. G. H. Clark, 601 W. Jefferson St., Rockford, Illinois. 8-43

WANTED—WINCHESTER 70 HORNET RIFLE. Perfect condition. A. E. Showalter, Wabash, Indiana, Route 1. 8-43

WANTED—MEDIUM OR HEAVY BARREL Gebby Varminter with Pacific dies, also medium or heavy barrel 2-R Lovell with Pacific dies will pay cash. Joe Fingal, 414 Maryland Ave., Wilmington (55), Delaware. 8-43

WANTED—LATE HI-STANDARD MOD. C, good to perfect. Stevens Off-Hand pistol No. 35 fair or better. Claude Shuff, 620 Franklin Street, Johnstown, Pa. 8-43

WANTED—MODEL-70, WINCHESTER .270 caliber. Must be excellent to perfect. Also 40 rounds of hunting ammunition. Emmott Chase, Route #1, Graham, Washington. 8-43

WANTED—STEVENS PUMP 620 OR 621, 20 gauge, very good to excellent. Will pay cash. Ray Maxwell, Vine Grove, Ky. 8-43

WANTED—LEFT HAND BOLT ACTION: BARrel, stock immaterial. Give description. H&R Cannon breach, 10 gauge single. C. F. Grim, 1238 San Pablo, Richmond, California. 8-43

WANTED—.357 S.&W. MAGNUM 6 INCH OR 8¾ inch and 4½ inch Woodsman, immediate cash, excellent or better. Pacific dies, shellholder, for .32 S.&W. Long. Lt. Elmo Reeves, Box 151, Carolina Beach, N. C. 8-43

WANTED—WINCHESTER HIGH SIDE 2-R Lovell, heavy barrel, blocks, perfect in and out, with dies and components for 1000 loads. Winchester High Side action, excellent to perfect, with or without barrel. Robert J. McFeeter, 76 So. 10th Street, Newark, N. J. 8-43

WANTED—LYMAN JUNIOR TARGETSPOT, Short Oberndorff Mauser action, .250 Winchester barrel. State price and condition. H. B. Anderson, Box 3051, Juneau, Alaska. 8-43

WANTED—1½" FECKER, UNERTL OR SUPER Targetspot; spotting scope; Winchester 70, .257R with cartridges; Standard W 52. Describe fully. C. H. Cubbedge, Orlando, Florida. 8-43

WANTED—FREE PISTOL, PICKERED ARMInius preferred. U.S.R.A., seven to eight inch, square latch only. Colt Single Action Army converted to .22 L.R. All very good to perfect only. Describe. Halford Lembke, 318 Oceanic Bldg., Seattle, Washington. 8-43

WANTED—SHARPS AND BALLARD LONG range Creedmoor Target rifles. Also fine sporting Models. Also fine Stevens-Pope Target Scheutzen rifles. Only want fine ones in excellent condition. Want Sharps Catalog. Write complete description. M. C. Clark, 169 No La Peer Drive, Beverly Hills, California. 8-43

WANTED—12 GAUGE WINCHESTER OR REMington pump action shot gun. Also High Standard .22 automatic, Model A-D-or E, and Colt Match Target and S.&W. K-22. Give all details and price. Victor E. Recane, 424 N. Lockwood Ave., Chicago, Illinois. 8-43

TRADE .22 LONG RIFLE KLEANBORE CARTridges for .22 Short's, or fresh Match L.R.'s for regular L.R.'s on value-for-value regular retail basis. Each pay own Express. Large stock, trade any amount. Object; quantity for gallery business, you get quality. Sportsmen's Headquarters Rifle Range, Lake Arrowhead, California. 8-43

WANTED—FOR CASH. KENTUCKY FLINT-lock and percussion rifles; also military long arms. Robert Abels, 860 Lexington Ave., New York 21, N. Y. 8-43

WANTED—.257, .270 OR .30-'06 D.C.M. SPORTER or Model-70 with Zeiss or Hensoldt 4X scope, or scope and mount only for Springfield. Describe fully, first letter. Dallas Burger, 602 E. Tujunga, Burbank, Calif. 8-43

WANTED—PERFECT MODEL A SOUTH BEND 4½ foot lathe and accessories; Starrett No. 42, 6 inch hermaphrodite; No. 360-A protractor; No. 57-B surface gauge. Dr. George Fielding, Glens Falls, New York. 8-43

WANTED—WINCHESTER MODEL-95, .30-'06 caliber; Colt revolver, .38 Police Special. State price and condition. C. H. Hoovler, 14 West Custis, Alexandria, Va. 8-43

WANTED—PERFECT 2-R LOVELL. GIVE DETAILS and groupings. Prefer complete outfit, loading tool and components. J. Caffrey, 93 So. Tenth Street, Newark, N. J. 8-43

WANTED—MODEL-70, .30-'06 SUPER GRADE, excellent to perfect and ammunition. Describe and state price. Cash, all letters answered. A. G. Eatherton, 1605½ A Street, Antioch, California. 8-43

WANTED—EXCELLENT WINCHESTER 12-12-28, rib, modified, standard stock, give serial number. Hans Peterson, 3665 34th Ave. South, Minneapolis 6, Minnesota. 8-43

WANTED—BROWNING SWEET SIXTEEN either full or modified. Barrel only for 3 shot Remington Sportsman 12 gauge full. Ajax 4X90 rifle scope. N. L. Hubbard, 628 Hollibaugh Ave., Akron 10, Ohio. 8-43

WANTED—WINCHESTER 61 OR 62, REMINGton 121 or 241. Very good or better. State price and description. R. Lee Cooper, Warrensburg, Mo. 8-43

WANTED—.270 WINCHESTER, MODEL 70. Excellent. T. Knudsen, 1974 Santee Street, Los Angeles 11, California. 8-43

WANTED—FRONTIER REVOLVER. GIVE PARticulars. Also separate Ivory grips. Remington cap and ball. William Bachrach, 6812 Harper Ave., Chicago, Illinois. 8-43

WANTED—1⅛ INCH FECKER OR TARGET-spot. Enfield action, .30 caliber issue bullets. J. T. Siler, 2520 Via Pinale, Palos Verdas Estates, California. 8-43

WANTED—NATIONAL MATCH SPRINGFIELD, large rifle primers, C type stock. Guy Graham, Woodburn, Oregon. 8-43

WANTED—PACIFIC OR FAIRBANKS SCALES, 10, 12, 16, 20 gauge greased felt and cardboard wads, brass shells and loading tools all kinds. 16 gauge Winchester pump. Good quality air rifle. Ithaca 10 gauge Magnum. Fred G. Holmes, M.D., 1005 Professional Bldg., Phoenix, Arizona. 8-43

WANTED—GOOD SAVAGE '99, .30-30 ACTION, E. G. (preferred) for $16.00. Also good Winchester High Wall action for $8.00. R. W. Winstead, Natchitoches, Louisiana. 8-43

WANTED—REMINGTON 141 OR 30 EXPRESS Model, .25, .32 or '06 caliber. Give description. Harry Raihl, Midwest, Wyoming. 8-43

WANTED—TO BUY FOR CASH. STEVENS 44½, Winchester Hi-Side, Sharps-Borchardt and Farquharson actions or complete rifles. Give price and full details first letter. Want empty cases, new or fired, in .25 Remington and .219 Zipper calibers. Leslie Lindahl, Central City, Nebraska. 8-43

WANTED—RIFLE: .250, .257, .30-'06. EXAMInation privilege. Few cartridges: .25-35, .30-30, .250, .22 Hi-Power and components. Trade or? Primers 1½. Bullseye for large rifle and pistol. Stephen Smith, Sonnette, Mont. 8-43

WANTED—BRIGGS & STRATTON GASOLINE engines, all sizes. South Bend Model-A-Lathe. Hammerless 3-barrel gun. Warren Baker, 5106 Liberty Ave., Pittsburgh, Pa. 8-43

WANT—FOR PERSONAL USE .22 MT-WOODSman, Hi-Standard HE, or 6½" Target Woodsman, late model. Also 8X Winchester scope for 75-T rifle. Alex. J. Krupy, 72 W. Adams Street, Chicago, Illinois. 8-43

WANTED—.257 WINCHESTER 70, OR .257 Remington rifle, excellent to perfect, also 2 boxes .30-'06, 187 grain nonmercuric cartridges. Charles J. Smith, 323 Paige St., Schenectady, N. Y. 8-43

WANTED—WILSON WILL TRADE SHOTGUNS and rifles for automatic pistols—.32, .380, .45 and Lugers. Spanish, German and American. Any quantity. Wholesale and retail. List ready. Wilson's, 3082 West 25th St., Cleveland 6, Ohio. 8-43

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WANTED—WINCHESTER 52, HEAVY BARREL with sights and ammunition. Excellent condition. Write description and price. Jesus E. Andrade, Box 363, El Paso, Texas. 8-43

WANTED—WILSON WILL PAY CASH FOR automatic pistols—.32, .380, .45 and Lugers. Any quantity. Quote price wanted in first letter. Wilson's, 3082 West 25th St., Cleveland 6, Ohio. 8-43

WANTED—.30-'06 SPRINGFIELD OR ENFIELD as issued, also bayonets. Robert Abels, 860 Lexington Ave., New York, N. Y. 10. 8-43

170 GR. S.P., 150 GR. BRONZE POINT, .30 CALIber bullets, .22 Colt O.M.T., S.&W. K-22, Air pistol. Hunting scopes. Herman Treptow, 209-11 South Main Street, Milltown, N. J. 8-43

WANTED—PERCUSSION REVOLVERS & PERcussion rifles, single piece or collections; also bolt action rifles. Morton's, 40 Fulton St., New York City, N. Y. 8-43

TRADE—Two boxes .25-20 cartridges for 300 large rifle primers. WANT—.25-35 Winchester with perfect bore and ammunition. Henry Webelhuth, Monica, Illinois. 8-43

WINCHESTER 70, STANDARD, .300 MAGNUM, very good to excellent, and ammunition. K. M. Mayer, Lebanon, Oregon. 8-43

AMMUNITION

WANTED—FOR CASH, AMMUNITION, ANY quantity, all calibers. Write Public Sport Shops, Dept. R-63, 13 S. 16th St., Philadelphia, Penna. 8-43

WANTED: HUNTING AMMUNITION FOR .25-20 Winchester Repeater. R. K. Ingram, Eureka, Montana. 8-43

TRADE—12 GAUGE HEAVY DUCK LOADS FOR .218 Bee ammunition, reloading supplies. Private use, write. J. A. Kline, Malvern, Iowa. 8-43

TRADE—1000 WESTERN .30-'06 BOATTAIL, preferably .22 Caliber L. R. ammunition. Adrien Grenier, North Grosvenor-Dale, Conn. 8-43

TRADE—550 ROUNDS .22 L. R. SUPER-X FOR 1000 primers, to be Winchester 120 or equal. G. W. Stephenson, 2127 Stillman St., Corpus Christi, Texas. 8-43

CASE OF KRAG MILITARY CARTRIDGES, EXcellent condition. What am I offered? C. W. Miller, 1513 Ash St., Scranton, Penna. 8-43

WANTED—.218 BEE, .220 SWIFT, AND .30-30 ammunition. Howard Brant, Jr., 607 Self Master Pkway, Union, N. J. 8-43

TRADE ONLY—.22 L. R. NEW AND IMPROVED Kleanbore. 500-.220 Swift Remington 48 grain S. P. 100-.257 Roberts, West-100 grain Silver Tip. 500-.30-'06 Western 180 grain O.P.E., 2000-12 gauge Trap loads, Remington new crimp. WANT—.22 L. R. Super match Mark II., .257 Western 100 grain O.P.E., .257 Winchester 100 grain pointed expanding. 7-mm West, and Winchester 175 grain S.P.; .270 W.C.F., Winchester 100-grain S.P. .30-'06, all makes 180 grain F.P. match ammunition. (no Frankford) 8-mm., all makes 236-grain S.P. 9-mm., all makes, 280-grain S.P. .44 W.C.F. Winchester and West. 200-grain regular and high velocity. All of my cartridges are new and clean. I expect the same. Equal prewar dollar value is my basis for trading. Will buy for cash any of the needed items. Philip G. Rust, Granoque, Delaware. 8-43

WANTED—300 SAVAGE CALIBER CARtridges. Cash or Trade for any other calibre ammunition. Klein's Sporting Goods, 505EC. South Halsted, Chicago. tf

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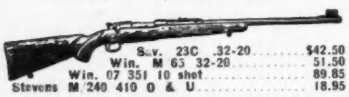

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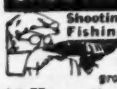

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APPROXIMATELY 900-50 GRAIN SISK EXPRESS .224" bullets, $20.00. Approximately 900-55 grain, 63 grain and 70 grain .228" (22 Hi-power) bullets, $20.00. 2100-93 grain .30 Luger Soft Point bullets, $70.00 lot, or $4.00 per 100. 200-225 grain .30 caliber Peters Belted bullets, $10.00. Terms; cash with order. J. B. Smith, C.M.M., USN, U.S. Naval Receiving Station, % Supt. of Ships, USN, Quincy, Mass. 8-43

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WANTED 50 .25-20 SINGLE SHOT CASES never fired or only once with NMNC primers. Can use cartridges to be unloaded. State price. C. Brewer, 1016 22 Street, Bradenton, Florida. 8-43

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WANTED—ONE CASE OR LESS 12 GAUGE shotgun shells, 6 or 5 shot. Shotgun primers. Peters No. 4, Western No. 209 or No. 3, Winchester No. 209 or new No. 4, Remington No. 57. Shotgun Wads, 10 or 12 gauge. .22 Long Rifle cartridges. .30-30 empties. One pair hip boots, size 9, 10, 11. State condition and price. George F. Weisner, 321 Melrose Street, Modesto, California 8-43

WANTED—L.R. PRIMERS, 30 CALIBER JACKeted bullets. Arthur H. Hanson, 2715 Wood, Kansas City, Kansas. 8-43

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WANTED—LARGE PISTOL AND LARGE RIFLE primers. Will pay cash or trade No. 116 primers. Also want bullets and cases all popular calibers, used Pacific dies for .220 Swift, .45 ACP, 7-mm., .303 Savage, .300 Savage, and 8-mm. I need cutting tools etc. for metal lathe. Enclose stamp for reply. L. E. Turley, Logan, Utah. 8-43

WANTED—2000 FIRED .32 CALIBER LONG cases, same number of .38 S. & W. cases and same number .38 Specials. 2000 primers for .38 Specials. 1000 primers for Expert 12 gauge shells. Good revolvers. W. M. Perry, Columbia, S. C. 8-43

TRADE—500 REGA, 70 GRAIN, SOFT POINT .257 slugs for 500 .22 Hornet slugs or 500 .22 Savage Hi-Power slugs. WANTED—100 new .275 H. & H. Magnum cases; 100 new .276 Pedersen cases with small primer pockets. Earle Adams, 14509 Alma, Detroit, Michigan. 8-43

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WANTED—FOR PERSONAL USE. WILL PAY your price for several hundred Winchester 115 primers and 45 grain bullets. Dr. J. E. Scott, Seymour, Iowa. 8-43

DUPONT POWDERS NO. 4227, 4350, 4064, 4320. Hi-Vel No. 2400 and Lightning, $1.60 per pound. No. 4759, No. 6, Unique and Bullseye, $1.00 per half pound. Send empty cans to pack powder into by parcel post. Send copy of Federal explosives license. Leslie Lindahl, Central City, Nebraska. 8-43

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WANTED—100 .275 H. & H. MAGNUM EMPTY cases. R. B. Sisk, Iowa Park, Texas. 8-43

100 PRIMERS, REMINGTON NO. 8½ OR WINchester No. 116, all N.M.N.C., 100 bullets almost any caliber, give first, second, and third choice as to make, weight, and type of bullet, and one pound of any Hercules or Dupont powder, except Sharpshooter, $7.50, per combination. If powder is not wanted deduct $1.75 per unit. Send Federal explosives license. No C.O.D.'s please. Robert Haelig, Boundbrook, N. J. 8-43

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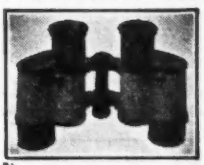

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